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Title:
Perfect score:
Sequence:
                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                     Database :
                                                                                                                                                                 Minimum DB seq length: 0
Maximum DB seq length: 200000000
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                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM protein - protein search, using sw model
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PIR_78:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                283366 seqs, 96191526 residues
                                                                                                                                                                                                                                                                                    BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                US-09-673-166B-273
140
1 GRQYIKANSKFIGITERGRSLYNTVATL 28
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	29	28	27	i Ki	) K	24	2.5	2.2	) L	20	19	18	17	16	15	14	1	1 1 2	11	10	. 9	α	7	0	л	.4	د اد		, Д	No.	Result
	47	47	47	47	47.5	4.	4.00		48	48.5	48.5	48.5	48.5	•	•	48.5	49	49	50	50	50	50	50	50	50	50	52	52	70	Score	
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	141078	T20571	B82559	T01667	H90183	T05761	A85318	A97271	B84174	C90538	A45948	SAZQGM	A26868	A54498	S16752	S06286	A55236	A38068	FOVWH3	FOVWA2	FOVWH4	A44001	FOVWLV	T09436	FOLJND	FOVWVL	T18650	S33979	BTCLTN		0.0000000000000000000000000000000000000
Hemorysin - Escher	יים ביייר		3	= atatrace		heavy	myosin heavy chain	'n		netical pro	27	merozoite	or merozoite	major merozoite su	merozoite		esin-related	polyprotein	polyprotein	nolvarotein		polyprotein			nolvarotein	7. T	othetical pro	Pin -	tentoxilvsin (RC 3	Description	20

45	4.4	. ω	42	41	40	9	8	37	36	ω	34	ω ω	32	31	30
46	46	46	46	46	46	46	46	46	46	46	46	46	47	47	47
32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.9	33.6	33.6	33.6
999	823	501	448	447	424	422	404	402	349	191	131	97	1161	1161	998
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868689	G89007	S54377	B64503	H97146	G97834	F81804	B81071	D81061	T43043	C64001	T12915	H64335	G81915	G81186	T00227
(D	protein F59B1.8 [i		hypothetical prote	siderophore/surfac	hemolvsin homolog	hypothetical prote	conserved hypothet	conserved hypothet		_ '		_ ,	hypothetical prote	Pavie	hemolysin A toxin

### ALIGNMENTS

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R;de Filippis, V.; Vangelista, L.; Schiavo, G.; Tonello, F.; Montecucco, C. Eur. J. Blochem. 229, 61-69, 1995
A;Title: Structural studies on the zinc-endopeptidase light chain of tetanus neurotoxin.
A;Reference number: S69348; MUID:95262688; PMID:7744050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Superfamily: tetanus toxin
C;Keywords: hydrolase; metalloproteinase; neurotoxin; transmembrane protein; zinc
C;Keywords: hydrolase; metalloproteinase; neurotoxin; transmembrane protein; zinc
F;2-457/Product: tentoxylysin light chain (fragment A) #status predicted <TTL>
F;461-1315/Product: tentoxylysin heavy chain (fragment B.C) #status experimental <TTH>
F;461-864/Domain: channel forming (fragment B) #status predicted <TXB>
F;461-1315/Domain: ganglioside binding (fragment C) #status predicted <TXC>
F;233,237/Binding site: zinc (His) #status predicted
F;234/Active site: Glu #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Comment: The source of this protein was an extrachromosomal plasmid.
C;Comment: The precursor is cleaved by endogenous proteinase activity to form light (fra C;Comment: The precursor is cleaved by endogenous proteinase activity to form light (fragment B) and chains are not toxic when separated). The amino end of the heavy chain (fragment B) C;Comment: Fragment B forms ion channels in a light dilayer. Fragment C binds to ganglid C;Comment: This potent neurotoxin binds to peripheral neuronal synapses, is internalized presynaptic neurons. It inhibits neurotransmitter release by proteolytic cleavage of sy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Description: blocks neuroexocytosis via hydrolysis of a Gln-Phe peptide bond in synapt
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R;Carlini, F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;Species: human immunodeficiency virus type 1, HIV-1
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 26-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gag polyprotein
C;Species: human
                                                                                                                                                                                                                                C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision
C;Accession: T18650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Reference number: S33979
A; Accession: S33979
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                                                                                                                          submitted to the EMBL Data Library, A;Reference number: Z19002
A;Accession: T18650
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A; Residues: 1-500 < CAR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           submitted to the EMBL Data
                      A;Cross-references: EMBL:Z73102; PIDN:CAA97405.1; GSPDB:GN00022; CESP:B0035.12
                                                                        A; Molecule type: DNA
                                                                                              A;Status: preliminary; translated from
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                                                    A;Residues: 1-836 <WIL>
                                                                                                                                                                                                                                                                                                                      hypothetical protein B0035.12 - Caenorhabditis elegans
A;Experimental source: clone B0035
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78.6%;
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0.042;
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gag polyprotein - human immunodeficiency virus type 1 (isolate LV) N;Alternate names: assemblin; core polyprotein; gag precursor N;Contains: capsid antigen core protein p24ch; core protein p1; core proteir C;Species: human immunodeficiency virus type 1, HIV-1 C;Date: 17-May-1985 #sequence_revision 17-May-1985 #text_change 05-Dec-1998 C;Accession: A03948
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A;Map position: 4
A;Introns: 28/3; 78/2; 134/3; 167/1; 299/3; 349/2; 550/1; 662/3; 700/3; 799/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Superfamily: AIDS-related virus gag polyprotein (;Keywords: AIDS; blocked amino end; core protein; immunodeficiency; lipoprotein; myrist) F;2-478/Product: gag precursor (assemblin) #status predicted <GAG> F;2-132/Product: matrix antigen core protein p17MA #status predicted <P17> F;20-132/Region: nuclear location signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C)ACCERSACY. .... Smith, D.H.; Cabractita, C..., ---
R;Muesing, M.A.; Smith, D.H.; Cabractita, C..., ---
Nature 313, 450-458, 1985
Nature 313, 450-458 tructure and expression of the human AIDS/lymphadenopathy retrovia
A;Title: Nucleic acid structure and expression of the human AIDS/lymphadenopathy retrovia
A;Title: Nucleic acid structure and expression of the human AIDS/lymphadenopathy retrovia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        F;392-405/Region: zinc finger CCHC motif
F;413-426/Region: zinc finger CCHC motif
F;2/Modified site: myristylated amino end (Gly)
F;392,395,400,405/Binding site: zinc (Cys, Cys,
F;413,416,421,426/Binding site: zinc (Cys, Cys,
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F;113-363/product: capsid antigen core protein p24CA #status predicted <P24>
F;364-377/Product: core protein p2 #status predicted <CP2>
F;378-432/product: nucleocapsid core protein p7NC #status predicted <CP7>
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                                                                                                                                                                                                                                                                                                                                                                 gag polyprotein - human immunodeficiency virus type 1 (isolate NDK)
N,Alternate names: core polyprotein
                                                                                                                            A; Title: Nucleotide sequence of HIV1-NDK: a highly cytopathic strain of the human A; Reference number: JQ0065; MUID:90034200; PMID:2806917
                                                                                                                                                                                R;Spire, B.; Sire, J.; Zachar, V.; Rey, F.; Barre-Sinoussi, Gene 81, 275-284, 1989
                                                                                                                                                                                                                                     C;Date: 30-Sep-1991 #sequence_revision 30-Sep-1991 #text_change 16-Jul-1999 C;Accession: J00065
                                                                                                                                                                                                                                                                                                                  N;Contains: core protein p15; core protein p17; C;Species: human immunodeficiency virus type 1,
A,Cross-references: GB:M27323; NID:g328154; PIDN:AAA44868.1; PID:g328157 C;Genetics:
                                                 A; Molecule type: DNA
A; Residues: 1-497 <SPI>
                                                                                                                                                                                                                                                                                            A; Note: host Homo sapiens (man)
                                                                                                A; Accession: JQ0065
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Pred. No.
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13;
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./--JUU/Product: gag precursor (assemblin) #status predicted <GAG>
F;2-132/Product: matrix antigen core protein; immunodeficiency; lipopro
F;20-32/Region: nuclear location signal
F;110-114/Region: nuclear location signal
F;133-363/Product: capsid antigen core protein p24CA #status predicted <P17>
F;364-377/Product: core protein p2 #status predicted <P24>
F;378-432/Product: nucleocapsid core protein p24CA #status predicted <P24>
F;378-432/Product: nucleocapsid core protein p7NC #status predicted <P24>
F;392-405/Region: zinc finger CCHC motif
F;413-426/Region: zinc finger CCHC motif
F;433-448/Product: core protein *1 #--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C;Accession: T09436
R;Bang, S.; Vinters, H.V.; A
submitted to the EMBL Data L
A;Reference number: Z16673
A;Accession: T09436
                                                                                                                                                                                                          C; Superfamily: AIDS-related virus gag polyprotein C; Keywords: AIDS; blocked amino end; core protein;
                                                                                                                                                                                                                                                           A;Gene: gag
                                                                                                                                                                                                                                                                               C; Genetics:
                                                                                                                                                                                                                                                                                                                                      A; Reference number: A90866; A; Accession: A03946
                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Note: host Homo sapiens (man)
C;Date: 17-May-1985 #sequence_revision 17-May-1985 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gag polyprotein - human immunodeficiency virus type 1 (isolate LAV-1a) N;Alternate names: assemblin; core polyprotein; gag precursor N;Contains: capsid antigen core protein p24CA; core protein p1; core p C;Species: human immunodeficiency virus type 1, HIV-1
                                                                                                                                                                                                                                                                                                  A;Residues: 1-500 <WAI>
                                                                                                                                                                                                                                                                                                                                                                            A; Title: Nucleotide sequence
                                                                                                                                                                                                                                                                                                                                                                                              R;Wain-Hobson, S.; Sonigo, P.; Danos, Cell 40, 9-17, 1985
                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
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C;Species: human immunodeficiency virus type 1, HIV-1
C;Date: 16-Jul-1999 #sequence_revision 16-Jul-1999 #text_change 24-Nov-1999
C;Accession: T09436
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C;Superfamily: AIDS-related virus
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A; Residues: 1-498 < P.
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C;Superfamily: AIDS-related virus gag polyprotein
C;Superfamily: AIDS-related virus gag polyprotein
C;Keywords: AIDS; core protein; immunodeficiency; polyprotein
F;1-129/Product: core protein p17 #status predicted <C17>
F;130-389/Product: core protein p24 #status predicted <C24>
F;390-497/Product: core protein p15 #status predicted <C15>
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78.6%;
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MUID:85099333;
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Library, July 1996
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Pred. No.
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predicted <GAG>
#status predicted <P17>
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C/Superfamily: AIDS-related virus gag polyprotein C/Keywords: core protein; polyprotein C/Keywords: core protein; polyprotein F/1-132/Product: core protein p17 #status predicted F/133-391/Product: core protein p24 #status predicted F/133-391/Product: core protein p25 #status predicted F/133-391/Product: core protein p25 #status predicted F/133-391/Product: core protein p27 #status p27 #s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gag polyprotein - human immunodeficiency virus type 1 (isolate CDC-451) N,Alternate names: core polyprotein N,Contains: core protein p15; core protein p17; core protein p24 C;Species: human immunodeficiency virus type 1, HIV-1 (c)nderes 30-Jun-1988 #sequence_revision 30-Jun-1988 #text_change 16-Jul-1999 C;Accession: A25523
                                                                                                                                                                                                                                                                                                            A; Molecule type: DNA
A: Residues: 1-500 < DES>
                                                                                                                                                                                                                                                                                                                                                                 A;Title: Molecular cloning and primary nucleotide sequence analysis of a distinct A;Reference number: A94136; MUID:87041461; PMID:3490666
A;Accession: A25523
                                                                                                                                                                                                                                A;Gene:
                                                                                                                                                                                                                                                                     A;Cross-references: GB:M13136; NID:g326459; PIDN:AAA44306.1;
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F;1-132/Product: core protein p17 #status predicted
F;133-391/Product: core protein p24 #status predicte
F;392-500/Product: core protein p15 #status predicte
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C;Superf
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A; Residues: 1-500 <LIY>
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C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 31-Jan-1997
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F;2/Modified site: myristylated amino end (Gly) (in mature form) #status predicted fig. 395,400,405/Binding site: zinc (Cys, Cys, His, Cys) #status experimental fig. 413,416,421,426/Binding site: zinc (Cys, Cys, His, Cys) #status experimental
                                                                                                                                                                                                                                                              ;Genetics:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                              11, S.M.; Kalyanaraman, V.S.; Casey, J.M.; Srinivasan, Natl. Acad. Sci. U.S.A. 83, 8380-8384, 1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Y.; Hui, H.; Burgess, C
rol. 66, 6587-6600, 1992
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               e sequence, genome organization, MUID:93021387; PMID:1404605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 50;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No. 16;
l; Mismatches
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Pred. No.
                                                           #status
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                                                           predicted <P15>
                                                                                     predicted
DB
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Andersen,
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                                                                                                                                                                                                                                                                                                                                                                                                                             human
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Length 500;

15

TERGRSLYNTVATL

28

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Science 227, 484-492, 1985
A;Title: Nucleotide sequence and expression of an AIDS-associated retrovirus (ARV-2).
A;Reference number: A04003; MUID:85090453; PMID:2578227
A;Accession: A03947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gag polyprotein - human immunodeficiency virus t N;Alternate names: core polyprotein N;Contains: core protein p15; core protein p17; C;Species: human immunodeficiency virus type 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
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C;Comment: Cleavage sites that yield the mature core proteins remain to be
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R; Sanchez-Pescador, R.; Power, M.D.; Barr, P.J.; Steimer,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Date: 17-May-1985 #sequence_revision 17-May-1985 #text_change 16-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Gene: gag
C;Superfamily: AIDS-related virus gag polyprotein
C;Superfamily: AIDS; core protein; immunodeficiency; pc
C;Keywords: AIDS; core protein p17 #status predicted
F;1-134/Product: core protein p24 #status predicte
F;135-393/Product: core protein p15 #status predicte
                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Note: host Homo sapiens (man)
C;Date: 17-May-1985 #sequence_revision 17-May-1985 #text_change 16-Jul-1999
C;Accession: A03945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Note: host Homo sapiens (man)
                                                                                                                                                                                                                                                                                                                                                                                      R;Ratner, L.; Haseltine, W.; Patarca, nberger, J.A.; Papas, T.S.; Ghrayeb, Nature 313, 277-284, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N; Contains: core
                                                                                   C;Superfamily: AIDS-related virus gag polyprotein C;Superfamily: AIDS-related virus gag polyprotein C;Keywords: AIDS; core protein; immunodeficiency; polyprotein E;1-132/Product: core protein p17 #status predicted <P17> F;133-391/Product: core protein p24 #status predicted <P24> F;392-512/Product: core protein p15 #status predicted <P15>
                                                                                                                                                                                                                                                                                                                         A;Title: Complete nucleotide sequence of the AIDS virus, A;Reference number: A93353; MUID:85111123; PMID:2578615 A;Accession: A03945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Loc
Matches
                                                                                                                                                                                            A;Gene:
                                                                                                                                                                                                                                  A;Cross-references: GB:M15654; GB:K02008; GB:K02009; C;Comment: Cleavage sites that yield the mature core
                                                                                                                                                                                                                                                                                  A; Residues: 1-512 < RAT>
                                                                                                                                                                                                                                                                                                      A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Älternate names: core polyprotein
;Contains: core protein p15; core protein p17; core protein
;Species: human immunodeficiency virus type 1, HIV-1
Query Match
Best Local S
Matches 11
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  polyprotein - human immunodeficiency virus type 1 (isolate HTLV-III,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
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                      Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TERGRSLYNTVATL 28
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    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      immunodeficiency virus type 1 (isolate ARV-2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         78.6%;
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                        35.7%;
78.6%;
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1; Mismatches
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l; Mismatches
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                           Pred. No.
                                             Score 50;
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#status predicted <P15>
                                                                                                                                                                                                                                                                                                                                                                                                                   J.; Chang, N.T.; Starcich,
      Mismatches
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16;
                                               DB 1;
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HIV-1
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ed <P17>
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                                               Length 512,
                                                                                                                                                                                                                                           GB:K02010; NID:g326383; PIDN:AAA442 proteins remain to be determined.
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           Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                          R.C.;
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В.,
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             Gaps
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           A;Description: may be part of a motor protein that provides anterograde fast axonal C;Superfamily: kinesin-related protein KIF3; kinesin motor domain homology C;Keywords: ATP; coiled coil; microtubule binding; nucleotide binding; P-loop F;1-349/Domain: head globular #status predicted <HGL>
                                                                                                                                                 A; Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
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A;Molecule type: protein
A;Residues: 1-506 <HEN>
C;Genetics:
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C;Date: 30-Sep-1993 #sequence_revision 30-Sep-1993 #text_change 26-Feb-1999
C;Accession: A38068
C;Accession: A38068
R;Henderson, L.E.; Bowers, M.A.; Sowder II, R.C.; Serabyn, S.A.; Johnson, D.G.; Bess Jr., J. Virol. 66, 1856-1865, 1992
A;Title: Gag proteins of the highly replicative MN strain of human immunodeficiency virus A;Reference number: A38068; MUID:92194415; PMID:1548743
A;Accession: A38068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          kinesin-related protein KLP68D - fruit fly (Drosophila melanogaster)
N;Alternate names: kinesin-like protein 5; KLP5
N;Alternate names: kinesin-like protein 5; KLP5
C;Species: Drosophila melanogaster
C;Date: 23-Mar-1995 #sequence revision 23-Mar-1995 #text_change 19-U;
C;Accession: A55236; B41298
R;Pesavento, P.A.; Stewart, R.J.; Goldstein, L.S.B.
J. Cell Biol. 127, 1041-1048, 1994
A;Title: Characterization of the KLP68D kinesin-like protein in Drosophila Communication of the KLP68D kinesin-like protein in Drosophila melanogaster)
A;Reference number: A55236; MUID:95050960; PMID:7525600
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                                                                                                                                                                                           A;Cross-references: GB:U15974; NID:g595912; PIDN:AAA69929.1; PID:g565090 R;Stewart, R.J.; Pesavento, P.A.; Woerpel, D.N.; Goldstein, L.S.B. Proc. Natl. Acad. Sci. U.S.A. 88, 8470-8474, 1991 A;Title: Identification and partial characterization of six members of the A;Reference number: A41298; MUID:92020874; PMID:1924306
                                                                                                                A; Molecule type: DNA
A; Residues: 'TC', 222-337, 'VRGQV'
                                                                                                                                                                                                                                                                                                                                         A; Molecule type: mRNA
A; Residues: 1-784 < PES>
                                                                                A;Cross-references: GB:M74431; NID:g157791;
                                                                                                                                                                   A; Accession: E41298
A; Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
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                                   FlyBase:Klp68D; KLP5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             71
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
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           FlyBase:FBgn0004381
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71.4%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 49;
Pred. No.
                                                                                                                         <STE>
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22;
                                                                                                  PIDN:AAA28658.1; PID:g157792
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C:Superfamily: major merozoite surface antigen
C:Keywords: glycoprotein; merozoite; surface antigen; tandem repeat
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A;Residues: 1-1086 <OLA>
A;Cross-references: EMBL:X61930
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EMBO J. 6, 4137-4142, 1987
A;Title: A naturally occurring gene encoding the major surface antigen precursor p190 of A;Reference number: S06286; MUID:88166657; PMID:3327688
A;Accession: S06286
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A;Residues: 1-1060 <CER>
C;Superfamily: major merozoite surface antigen
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F;106-113/Region: nucleotide-binding motif A (P-loop)
F;550-580/Domain: helical rod #status predicted <ROD>
F;581-784/Domain: tail globular #status predicted <TGL>
F;112/Binding site: ATP (Lys) #status predicted
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#### SUMMARIES

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PARTIAL SEQUENCE, AND DISULFIDE BONDS.  MEDLINE=90201034; PubMed=2108021;  Krieglstein K., Henschen A., Weller U., Habermann E.;  "Arrangement of disulfide bridges and positions of sulfhydryl groups in tetanus toxin.";	SEQUENCE OF 742-1314 FROM N.A. PLASMID=75 Kbp; MEDLINE=86085672; PubMed=3510187; MEDLINE=8085672; PubMed=3510187; Pairweather N.F., Lyness V.A., Pickard D.J., Allen G., Thomson R.O.; "Cloning, nuclectide sequencing, and expression of tetanus toxin fragment C in Escherichia coli."; J. Bacteriol. 165:21-27(1986).	lassicann lann lann lann lann lann lann lann	SEQUENCE FROM N.A. STRAIR=CNJ911; PLASMID=75 Kbp; MEDLINE=87040747; PubMed=3774547; Fairweather N.F., Lyness V.A.; "The complete nucleotide sequence of tetanus toxin."; Nucleic Acids Res. 14:7809-7812(1986).	SEQUENCE FROM N.A.  PLASMID=75 Kbp;  MEDLINE=87505814; PubMed=3536478;  Bisel U., Jarausch W., Goretzki K., Henschen A., Engels J.,  Weller U., Hudel M., Habermann E., Niemann H.;  "Tetanus toxin: primary structure, expression in E. coli, and homology with botulinum toxins.";  BMBO J. 5:2495-2502(1986).	13-AUG-1987 (Rel. 05, Created) 13-AUG-1987 (Rel. 05, Last sequence update) 10-OCT-2003 (Rel. 42, Last sequence update) Tetanus toxin precursor (EC 3.4.24.68) (Tentoxylysin) [Contains: Tetanus toxin light chain (Tetanus toxin chain I); Tetanus toxin heavy chain (Tetanus toxin chain H)]. TETX OR CTP60. Clostridium tetani. Plasmid pE88, and Plasmid 75 Kbp. Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridium. NCBI_TaxID=1513; [1]	ILT 1 CLOTE TETE CLOTE STANDARD; PRT; 1314 AA. P04958;

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MEDLINE=92037649;
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"Structure of the receptor binding fragment HC of tetanus neurotoxin.";
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"Tetanus and botulinum-B neurotoxins block neurotransmitter release
by proteolytic cleavage of synaptobrevin.";
Nature 359:832-835(1992).
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MEDLINE=93010948; PubMed=1396558;
Schiavo G., Poulain B., Rossetto O.,
                                                                                                                                                                           the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for contities requires a license agreement (See http://www.isb-sib.ch/a
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MEDLINE=93063293; PubMed=1331807;
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InterPro; IPR002160; Kunitz_legume.
InterPro; IPR006025; Pept_M_Zn_BS.
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STRUCTION: TETANUS TOXIN ACTS BY INHIBITING NEUROTRANSMITTER FUNCTION: TETANUS TOXIN ACTS BY INHIBITING NEUROTRANSMITTER RELEASE. IT BINDS TO PERIPHERAL NEURONAL SYNAPSES, IS INTERNALIZED AND MOVES BY RETROGRADE TRANSPORT UP THE AXON INTO THE SPINAL CORD WHERE IT CAN MOVE BETWEEN POSTSYNAPTIC AND PRESYNAPTIC NEURONS. IT INHIBITS NEUROTRANSMITTER RELEASE BY ACTING AS A ZINC ENDOPEPTIDASE THAT CATALYZES THE HYDROLYSIS OF THE 76-GLN-|-PHE-77 BOND OF SYNAPTOBREVIN-2.

ENDOP SYNAPTOBREVIN-2.

CATALYTIC ACTIVITY: Hydrolysis of 76-Gln-|-Phe-77 bond in
                                                                          ; A25689; BTCLIW.
; 1AF9; 29-APR-98.
; 1A8D; 14-OCT-98.
; 1D0H; 27-MAR-00.
                                                                                                                                                                                                                                              GANGLIOSIDE RECEPTORS.
SIMILARITY: Belongs to peptidase family M27.
                                                                                                                                                                                                                                                                Synaptobrevin 2.

COPACTOR: Binds 1 zinc ion per subunit (By similarity).

SUBUNIT: THE PRECURSOR POLYPEPTIDE IS SUBSEQUENTLY CLEAVED

YIELD SUBCHAINS L AND H. THESE REMAIN LINKED BY A DISULFIDE

AND ARE NON-TOXIC AFTER SEPARATION.

MISCELLANEOUS: THE C-TERMINAL OF THE HEAVY CHAIN BINDS TO
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ProDom; PD001963;
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TETANUS TOXIN HEAVY CHAIN.
ZINC (CATALYTIC) (BY SIMILARITY)
BY SIMILARITY.
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RESULT 2
GAG_HV1EL
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Best Local
                                                                                                                                   Pfam; PF000540; Gag_p17; 1.
Pfam; PF00067; Gag_p24; 1.
Pfam; PF000098; zf-CCHC; 2.
PRINTS; PR00939; C2HCZNFINGER.
PRINTS; PR00934; HTVIMATRIX.
            CHAIN
                                   CHAIN
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                                                                                 Zinc-finger;
INIT_MET
                                                                                                               SMART; SM00343; ZnF C2HC; 2. PROSITE; PS50158; ZF CCHC; 2.
                                                                                                                                                                                             InterPro; IPR000721; Gag p24.
InterPro; IPR008916; Retrov capsid
InterPro; IPR008919; Retrov-capsid
InterPro; IPR000071; Retrovir p17.
InterPro; IPR001878; Znf_CCHC.
                                                                                                      AIDS; Core
                                                                                                                                                                                                                                                                                                                 use by non-profit institutions as lon-
modified and this statement is not remov-
entities requires a license agreement (So
or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P04592;
13-AUG-1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Alizon M., Wain-Hobson S., Montagnier L., Sonigo P. "Genetic variability of the AIDS virus: nucleotide of two isolates from African patients.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human immunodeficiency virus type 1 (ELI isolate)
Viruses; Retroid viruses; Retroviridae; Lentivirus
NCBI_TaxID=11689;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=86245056; PubMed=2424612;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAG
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10-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                            PTM: The p24 protein is phosphorylated.
SIMILARITY: Contains 2 CCHC-type zinc fingers.
                                                                                                                                                                                                                                                                                                                                                                                                                            FUNCTION: PERFORMS HIGHLY COMPLEX ORCHESTRATED TASKS DURING THE ASSEMBLY, BUDDING, MATURATION, AND INFECTION STAGES OF THE VIRAL REPLICATION CYCLE. DURING VIRAL ASSEMBLY, THE PROTEINS FORM MEMBRANE ASSOCIATIONS AND SELF-ASSOCIATIONS THAT ULTIMATELY RESULT IN BUDDING OF AN IMMATURE VIRION FROM THE INFECTED CELL. GAG PRECURSORS ALSO FUNCTION DURING VIRAL ASSEMBLY TO SELECTIVELY BIND AND PACKAGE TWO PLUS STRANDS OF GENOMIC RNA. PTM: The p24 protein is phosphorylated.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         polyprotein
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                                                                                                   protein; Polyprotein; Myristate;
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                                                                                          Repeat;
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Retrovir_p17.
Znf com
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                                                                                          Lipoprotein
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Core proteins P17,
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Pred. No.
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3. 0.014;
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        P17
P24
P2.
P7
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P6.
                                                                                                 Phosphorylation;
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                             (NUCLEOCAPSID PROTEIN)
                                                     (MATRIX PROTEIN).
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RESULT
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AIDS Res. Hum. Retroviruses 10:1143-1155(1994).

C -!- FUNCTION: PERFORMS HIGHLY COMPLEX ORCHESTRATED TASKS DURING THE CASSEMBLY, BUDDING, MATURATION, AND INFECTION STAGES OF THE VIRA REPLICATION CYCLE. DURING VIRAL ASSEMBLY, THE PROTEINS FORM MEMBRANE ASSOCIATIONS AND SELF-ASSOCIATIONS THAT ULTIMATELY MEMBRANE ASSOCIATIONS AND SELF-ASSOCIATIONS THAT ULTIMATELY GAG PERCURSORS ALSO FUNCTION DURING VIRAL ASSEMBLY TO SELECTIVE GAG PERCURSORS ALSO FUNCTION DURING VIRAL ASSEMBLY TO SELECTIVE GAG PERCURSORS ALSO FUNCTION DURING VIRAL ASSEMBLY TO SELECTIVE GIND AND PACKAGE TWO PLUS STRANDS OF GENOMIC RNA.

-!- FUM: The p24 protein is phosphorylated.
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Best Local
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InterPro; IPR001878; Znf
Pfam; PF00540; Gag_p17; T
Pfam; PF000607; Gag_p24; Il
Pfam; PF00098; zf-CCHC; 2
                                                                                                                                                                                                                                    EMBL; U12055; AAA76686
PDB; 1HVN; 31-JAN-94
PDB; 1HVO; 31-JAN-94.
PDB; 2ZNF; 15-JUL-92.
                           PROSITE; PS50158; ZnF C2HC; 2.

PROSITE; PS50158; ZF CCHC; 2.

AIDS; Core protein; Polyprotein; Myristate;
Zinc-finger; Repeat; 3D-structure; Lincountry MET 0
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                                                                                                               PRINTS; PR00939; C2HCZNFINGER.
                                                                                                                                                                                                                                                                                                      entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                              use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Reitz M.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=82834;
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15-JUL-1998
10-OCT-2003
                                                                                                                                                                                                [nterPro;
                                                                                                                                                                                                          InterPro;
                                                                                                                                                                                                                          interPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human immunodeficiency virus type 1 (LW12.3 isolate) Viruses; Retroid viruses; Retroviridae; Lentivirus.
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OCT-2003 (Rel. 42, Last annotation update)
polyprotein [Contains: Core proteins P17,
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IPR008916; Retrov capsid_N.
IPR008919; Retrovicapsid_N.
IPR000071; Retrovir_p17.
IPR001878; Znf_CCHC.
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Repeat; 3D-structure; Lipopro
0 BY SIMILARITY
1 131 CORE PROTEIN
132 362 CORE PROTEIN
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36, Last
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                                            Lipoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              No. 1.4;
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     P17
                                                                                                                                                                                                                                                                                                                                              as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lautenberger J., Hahn B.M., ., Gallo R.C., Blattner W.; onse in a laboratory worker
                                                      Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>ب</u>
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    (MATRIX PROTEIN).
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RESULT 4

NADB RHIJO

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ID NADB RHIJO

ID 28-FEB

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28-FEB-2003
28-FEB-2003
28-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kaneko T., Nakamura Y., Sato S., Asamizu E., Kato T., Sasam Watanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura Kishida Y., Kiyokawa C., Kohara M., Matsumoto M., Matsuno A Mochizuki Y., Nakayama S., Nakazaki N., Shimpo S., Sugimoto Takeuchi C., Yamada M., Tabata S.;
"Complete genome structure of the nitrogen-fixing symbiotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
Complete
NP_BIND
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA Res.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mesorhizobium loti.";
DNA Res. 7:331-338(2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=MAFF303099;
MEDLINE=21082930; PubMed=11214968;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Phyllobacteriaceae; Mesorhizobium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rhizobium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 L-aspartate oxic
NADB OR MLL5834.
                                                                                Pfam; PF00890; FAD_binding_2; 1.
Pfam; PF02910; succ_DH_flav_C; 1.
TIGRFAMs; TIGR00551; nadB; 1.
                                                                                                                                                                                                                                      entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                          use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                   EMBL; AP003007; BAB52214.1; -
                                                                                                                                                                                                                                                                                                                the European Bioinformatics Institute.
                                                            Pyridine
                                                                                                                                                           InterPro;
                                                                                                                                                                                 InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            iminoaspartate.
CATALYTIC ACTIVITY: L-aspartate +
                                                                                                                                                                                                                                                                                                                                                                                               NADB
                                                                                                                                                                                                                                                                                                                                                                                                                 PATHMAY: NAD biosynthesis; aspartate to NaMN; first step.
SUBCELLULAR LOCATION: Cytoplasmic (By similarity).
SIMILARITY: BELONGS TO THE FAD-DEPENDENT OXIDOREDUCTASE FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FUNCTION: Catalyzes the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COFACTOR:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NH(3) + H(2)O(2).
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                                                                                                                                                                                                                                                                                                                                SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the E
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                                                                                                                                                                                                                                                                                                                                                                                             SUBFAMILY.
                                        proteome.
                                                              nucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             loti (Mesorhizobium loti).
Proteobacteria; Alphaproteobacteria;
                                                                                                                                     IPR005288; NadB.
IPR004112; Succ_DH_flav_C.
                                                                                                                                                                               IPR003953; FAD_bind2.
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377
432
448
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410
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(Rel. 41, Last annotation update)
oxidase (EC 1.4.3.16) (LASPO) (Qu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Rel. 41, Created)
(Rel. 41, Last seq
(Rel. 41, Last ann
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                                                              biosynthesis;
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78
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N-myristoyl glycine (
similarity).
V, Abore
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No.
                                                                  Oxidoreductase; Flavoprotein;
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P1.
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                                                                                                                                                                                                                                                            . Usage by and for commercial http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              + 0(2)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                = oxaloacetate
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Sugimoto M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sasamoto
                                                                                                                                                                                                                                                                                                                                          EMBL
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Best Local S
Matches 11
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TISSUE=Fetal liver;
MEDLINE=20168615; PubMed=10706098;
Welasco G., Cal S., Merlos-Suarez A., F.
Nakano A., Arribas J., Lopez-Otin C.;
"Human MT6-matrix metalloproteinase: id
activation, and expression in brain tum
Cancer Res. 60:877-882(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MM25 HUMAN (9913Q0; 16-OCT-2001 (Re)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACT_SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                      De Saint-Vis B.M., Clair Pahia S., Caux -..

Pin J.J., Chalus L., Ait-Yahia S., Caux -..

Pin J.J., Chalus L., Ait-Yahia S., Caux -..

Possiez F., Lebecque S.;

Molecular cloning of a novel human membrane-type matrix

"Molecular cloning of a novel 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
15-MAR-2004 (Rel. 43, Last annotation update)
Matrix metalloproteinase-25 precursor (EC 3.4
(Membrane-type matrix metalloproteinase 6) (M
matrix metalloproteinase) (MT6-MMP) (Leukolys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HUMAN
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Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kojima S., Itoh Y., Matsumoto S., SELAL W., (MT6-MMP, MMP-25)
"Membrane-type 6 matrix metalloproteinase (MT6-MMP, MMP-25)
second glycosyl-phosphatidyl inositol(GPI)-anchored MMP.";
submitted (APR-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MMP25 OR MT6MMP
                                                                                                                                                                                                                                        Kojima S.-I., Itoh Y., Matsumoto S.-I., Ma
"Membrane-type 6 matrix metalloproteinase
second glycosyl-phosphatidyl inositol (GPI
FEBS Lett. 480:142-146 (2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Leukolygin/MMP25/MT6-MMP: a novel matrix metalloproteinase specifically expressed in the leukocyte lineage."; Cell Res. 9:291-303(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=20092460;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=20487129; PubMed=11034316;
                                                                                                                                                                                                                                                                                                                                                                                                 GPI-ANCHOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                           SUBCELLULAR LOCATION: Attached to the membrane TISSUE SPECIFICITY: Expressed predominantly in and spleen. Expressed also in colon carcinomaglioblastomas
                                                                                                                                                                               FUNCTION: May activate progelatinase COFACTOR: Binds 1 zinc ion per subuni
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             422
                                  glioblastomas. PTM: The precu
   PTM: The precursor similarity).
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nilarity 55.0%;
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513 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PubMed=10628838;
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Pred. No.
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3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BY SIMILARITY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Craniata; Ve
Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6DA2B4B63F4200BC CRC64;
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inase 6) (MT-MMP 6
(Leukolysin).
                                     by a
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                                                                                                                                                                                                                                                                                   (GPI) -anchored
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Lambert C.A., Vanbervi
x C., Richelle-Nusgens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Vertebrata; Euteleostomi; 
i; Hominidae; Homo.
                                     furin
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                                        endopeptidase
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P, MMP-25)
Ced MMP.";
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                                                                                                                             m (By similarity)
by a GPI-anchor.
leukocytes, lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               in dendritic
                                                                                                       astrocytoma
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RESULT 6
GAG_HV1W2
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                                                                                                                                                        Query Match
Best Local S
Matches 12
                                                                          _HV1W2
                      GAG HV1W2
P05889;
01-NOV-1988
01-FEB-1994
10-OCT-2003
   GAG polyprotein (Fragment).
                                                                                                                                                                                                         LIPID
DOMAIN
DOMAIN
CONFLICT
                                                                                                                                                                                                                                                  METAL
DISULFID
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ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00413; Peptidase M10; 1.
Pfam; PF0393; Peptidase M10 N; 1.
PRINTS; PR00138; MATRIXIN.
SMART; SM00120; HX; 4.
SMART; SM00235; ZnMC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     GO; GO:0016020; C:membrane; NAS.
GO; GO:0016020; C:membrane; NAS.
GO; GO:0006954; P:inflammatory response; NAS.
GO; GO:0006508; P:proteclysis and peptidolysis; NAS.
InterPro; IPR001818; Pept M:0A M:12B.
InterPro; IPR001818; Pept M:DA M:2B.
InterPro; IPR001818; Pept M:DA M:2B.
InterPro; IPR006025; Pept M:DA M:DB.
InterPro; IPR006025; Peptidase_M.
                                                                                                                                                                                                                                                                                                                      CHAIN
PROPEP
                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                           PROPEP
                                                                                                                                                                                                                                                                                                                                                      SIGNAL
                                                                                                                                                                                                                                                                                                                                                            GPI-anchor;
                                                                                                                                                                                                                                                                                                                                                                     Hydrolase;
                                                                                                                                                                                                                                                                                                                                                                            PROSITE; PS00024; HEMOPEXIN; FALSE NEG. PROSITE; PS00142; ZINC_PROTEASE; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00045; hemopexin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genew;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; AJ239053; CAB94713.1;
EMBL; AF145442; AAF66697.2;
EMBL; AF185270; AAG417007.1;
EMBL; AB042328; BAB20584.1;
EMBL; AJ272137; CAC03490.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      or send an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entities requires a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      modified and this statement is not removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEROPS;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GO:0005578; C:extracellular matrix; NAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SWISS-PROT entry is copyright. It is produced through a collaboration en the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                  59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AJ272137;
Q02853; 11
                                                                                                                                      N
                                                                                                                                                         12;
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                                                                                                                                                                  Similarity
                                                                                                                RDAIKVMORFAGLPETGRMDPGTVATM
                                                                                                                                 ROYIKANSKFIGITERGRSLYNTVATL 28
    (Rel. 09, Created)
(Rel. 28, Last sequence update)
(Rel. 42, Last annotation update)
thain [Contains: Core proteins P17,
                                                                                                                                                                                                                                                                                                                                                                   Metalloprotease; Zinc; Calcium;
                                                                                                                                                                                                562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   equires a license agreement (S email to license@isb-sib.ch).
                                                                                                                                                        Conservative
                                                                                                                                                                                                                                      540
314
90
233
234
237
237
243
317
539
                                                                                                                                                                                                                                                                                                                                                         Extracellular matrix; Lipoprotein
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108
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                                                                STANDARD;
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511
90
233
234
237
237
243
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508
5107
553
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107
539
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••
                                                                                                                                                     Score 51; DB
Pred. No. 4.7;
3; Mismatches
                                                                                                                                                                                                                                                                 ZINC (CATALYTI
BY SIMILARITY.
ZINC (CATALYTI
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                                                                                                                                                                                                                                              ZINC (CATALYT
BY SIMILARITY
                                                                                                                                                                                                                                                                                               HEMOPEXIN-LIKE.
CYSTEINE SWITCH
                                                                                                                                                                                                                  POLY-LEU
                                                                                                                                                                                                                                  GPI-anchor amidated alanine (Potential).
                                                                                                                                                                                                                             POLY-ARG
                                                               PRT;
                                                                                                                                                                                                                                                                                                                   REMOVED IN MATURE FORM
                                                                                                                                                                                                                                                                                                                            MATRIX METALLOPROTEINASE-25
                                                                                                                                                                                            A6A50AE05D969C64 CRC64;
                                                                                                                                                                                                                                                                                                                                        SIMILARITY
                                                                                                                                                                                                      R (IN REF.
                                                                                                                                                                                                                                                       (CATALYTIC)
                                                                                                                                                                                                                                                                                    (CATALYTIC)
                                                                                                               85
                                                               388
                                                                                                                                                                4.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (See http://www.isb-sib.ch/announce/
                                                                                                                                                                        DB 1; Length 562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         There are no
                                                              AΑ
                                                                                                                                                                                                                                                                                                                                                                  Signal;
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                                                                                                                                                     12;
                                                                                                                                                                                                      ω
                                                                                                                                                                                                                                                                                               (POTENTIAL)
            P24,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Usage
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SIMILARITY)
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           ₽2,
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                                                                                                                                                                                                                                                                                                                  (POTENTIAL).
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           P7,
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           Ρ1,
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           P6]
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                                                                                                                                                    Gaps
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no
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RESULT 7
GAG_HV1ND
ID GAG_H
         В
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Best Local S
Matches 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AN Hahn B.H., Shaw G.M., Taylor M.E., Redfield R.R., Markham P.D.,
A Salahuddin S.Z., Wong-Staal F., Gallo R.C., Parks E.S., Parks W.P.,
RT "Genetic variation in HTLV-III/LAV over time in patients with AIDS or
RT at risk for AIDS.",
I Science 232:1548-1553(1986).
C -!- FUNCTION: PERFORMS HIGHLY COMPLEX ORCHESTRATED TASKS DURING THE
C ASSEMBLY, BUDDING, MATURATION, AND INFECTION STAGES OF THE VIRAL
C ASSEMBLY, BUDDING OF AN INFECTION STAGES OF THE VIRAL
C REPLICATION CYCLE. DURING VIRAL ASSEMBLY, THE PROTEINS FORM
MEMBRANE ASSOCIATIONS AND SELF-ASSOCIATIONS THAT ULTIMATELY
C RESULT IN BUDDING OF AN IMMATURE VIRION FROM THE INFECTED CELL.
C REPLICATION DURING VIRAL ASSEMBLY TO SELECTIVELY
C RESULT IN BUDDING OF AN IMMATURE OF GENOMIC RNA.
C GAG PRECURSORS ALSO FUNCTION DURING VIRAL ASSEMBLY TO SELECTIVELY
C GAG PRECURSORS ALSO FUNCTION DURING VIRAL ASSEMBLY TO SELECTIVELY
C BIND AND PACKAGE TWO PLUS STRANDS OF GENOMIC RNA.
C -!- FUN: The p24 protein is phosphorylated.
C -!- PUN: The p24 PROTEIN MAD WMJ3 WERE OBTAINED FROM
C -!- PUN SCELLANEOUS: ISOLATES WMJ1, WMJ2, AND WMJ3 WERE OBTAINED FROM
C -!- PUN SCELLANEOUS: ISOLATES WMJ1, WMJ2, AND WMJ3 WERE OBTAINED FROM
C -!- PUN SCELLANEOUS: ISOLATES WMJ1, WMJ2, AND WMJ3 WERE OBTAINED FROM
C -!- PUN SCELLANEOUS: ISOLATES WMJ1, WMJ2, AND WMJ3 WERE OBTAINED FROM
C BLOOD SAMPLES SEQUENTIALLY THED MOTHERD
                                                             P18800;
01-NOV-1990
01-FEB-1994
10-OCT-2003
                                                GAG
                                                                                                                                                                                                                                                                                                                NON TER
SEQUENCE
                                    GAG.
Human immunodeficiency virus type 1 (NDK isolate) Viruses; Retroid viruses; Retroviridae; Lentivirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro;
Pfam; PF00
                                                                                                                                                                                                                                                                                                                                                                        CHAIN
                                                                                                                                                                                                                                                                                                                                                                                        CHAIN
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INIT MET
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                                                                                                                                                                                                                                                                                                                                                                                                                                                              AIDS;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       entities requires
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        modified
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human immunodeficiency virus type 1 (WMJ2 isolate) (HIV-1). Viruses; Retroid viruses; Retroviridae; Lentivirus. NCBI_TaxID=11705;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=86235450;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                             polyprotein
                                                                                                                       DNTAH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way lifted and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1FGL; 01-APR-97
K03457; GAG$WMJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PF00540; Gag_p17; 1.
PF00607; Gag_p24; 1.
                                                                                                                                                                                               71
                                                                                                                                                                                                                         15
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Core protein; Polyprotein; Myristate;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      K03457; AAB12988.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PR00234; HIV1MATRIX.
                                                                                                                                                                                                                     TERGRSLYNTVATL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PERINATALLY INFECTED BY HER MOTHER.
                                                                                                                                                                                             SEELRSLYNTVATL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IPR000721; Gag_p24.
IPR0008916; Retrov capsid C.
IPR008919; Retrov capsid N.
IPR000071; Retrovir_p17.
                                                                                                                                                                                                                                                                                                             388
388 AA;
                                                             (Rel.
(Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                                       132
363
377
                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                            3D-structure; Lipoprotein.
0 0 BY SIMILAR
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                                                                                                                    STANDARD;
                                             [Contains:
                                                             16,
28,
42,
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362
376
>388
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43314
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                                                                                                                                                                                                                                                                  35.7%;
78.6%;
                                       Last sequence update)
Last annotation update)
ains: Core proteins P17,
                                                                                        Created)
                                                                                                                                                                                             84
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                                                                                                                                                                                                                                                                                                             MΨ;
                                                                                                                                                                                                                                                    CORE PROTEIN P24 (CORE ANTIGEN CORE PROTEIN P2.
CORE PROTEIN P7 (NUCLEOCAPSID N-myristoyl glycine (in host)
                                                                                                                                                                                                                                                                   Pred.
                                                                                                                                                                                                                                                                             Score 50;
                                                                                                                                                                                                                                                                                                                                       similarity).
                                                                                                                                                                                                                                                                                                                                                                                                 CORE PROTEIN P17
                                                                                                                    PRT;
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                                                                                                                                                                                                                                                                     No.
               (NDK isolate) (HIV-1)
                                                                                                                    496
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        Phosphorylation;
                                          P24, P2,
                                                                                                                                                                                                                                                   2;
                                                                                                                                                                                                                                                                                                                                                                                               (MATRIX PROTEIN).
                                                                                                                                                                                                                                                                             Length 388;
                                                                                                                                                                                                                                                   Indels
                                         P7,
                                                                                                                                                                                                                                                                                                                                                   (By
                                         Р1,
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GAG_HV1OY
ID GAG_H
AC P2088
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Matches 11
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Spire B., Sire J., Zachar V., Rey Hampe A., Chermann J.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the European Bioinformatics Institute. There are no rest use by non-profit institutions as long as its content modified and this statement is not removed. Usage by at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
 GAG_HV10
P20889;
                                                                                                                                                                                       ZN_FING
ZN_FING
LIPID
                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00540; Gag_p17; 1.
Pfam; PF00607; Gag_p24; 1.
Pfam; PF00098; zf-CCHC; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entities requires a license agreement (Some send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -!- SIMILARITY: Contains 2 CCHC-type zinc fingers.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Nucleotide sequence of HIV1-NDK: a highly cytopathic human immunodeficiency virus.";
                                                                                                                                                                                                                                     CHAIN
CHAIN
CHAIN
CHAIN
CHAIN
                                                                                                                                                                                                                                                                                                                               PRINTS; PR00939; C2HCZNFINGER.
PRINTS; PR00234; HIVIMATRIX.
SMART; SM00343; ZDF C2HC; 2.
PROSITE; PS50158; ZF_CCHC; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR000721;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HIV; M27323; GAG$NDK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; M27323; AAA44868.1;
                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR001878;
                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR008916;
InterPro; IPR008919;
InterPro; IPR000071;
                                                                                                                                                                                                                           CHAIN
                                                                                                                                                                                                                                                                                               TINIT
                                                                                                                                                                                                                                                                                                         Zinc-finger;
                                                                                                                                                                                                                                                                                                                     AIDS; Core protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FUNCTION: PERFORMS HIGHLY COMPLEX ORCHESTRATED TASKS DURING THE ASSEMBLY, BUDDING, MATURATION, AND INFECTION STAGES OF THE VIRAL ASSEMBLY, THE PROTEINS FORM MEMBRANE ASSOCIATIONS AND SELF-ASSOCIATIONS THAT ULTIMATELY RESULT IN BUDDING OF AN IMMATURE VIRION FROM THE INFECTED CELL. GAG PRECURSORS ALSO FUNCTION DURING VIRAL ASSEMBLY TO SELECTIVELY BLYDD AND PACKAGE TWO PLUS STRANDS OF GENOMIC RNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PTM: The p24 protein is phosphorylated.
MISCELLANEOUS: NDK, ISOLATED FROM A ZAIRIAN PATIENT AFFECTED WITH
            AOTAH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JQ0065;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              81:275-284(1989)
                                                                                                                                                                                                                                                                                               MET
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                                                                                             15
                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the Swiss Institute of Bioinformatics
                                                                                      TERGRSLYNTVATL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AND IS A HIGHLY CYTOPATHOGENIC STRAIN.
                                                                        SEEIRSLYNTVATL
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408
                                                                                                                     Conservative
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             STANDARD;
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374
429
496
404
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Polyprotein; Myristate; Phosphorylation;
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Retrov_capsid_N.
Retrovir_pl7.
                                                                                                                                                                  55152
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0 BY SIMILARITY
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                                                                                                                     Score 50; DB Pred. No. 5.8; 1; Mismatches
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CORE PROTEIN I
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CORE PROTEIN I
CORE PROTEIN
                                                                                                                                                                               similarity)
                                                                                                                                                                                      N-myristoyl glycine (in host)
                                                                                                                                                                                                   CCHC-TYPE 1.
             PRT;
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PROTEIN P2.
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                                                                                                                                            DB 1;
              A
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                                                                                                                                                                                                                                                    (NUCLEOCAPSID PROTEIN)
                                                                                                                                                                                                                                                                                    (MATRIX PROTEIN)
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Best Local 9
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01-FEB-1994
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         - -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=90148544; PubMed=2559749; Huet T., Dazza M.C., Brun-Vezinet F., Roelants G.E., Wain-Hobson ("A highly defective HIV-1 strain isolated from a healthy Gabonese individual presenting an atypical western blot."; AIDS 3:707-715(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human immunodeficiency virus type 1 (OYI isolate) (HIV-1). Viruses; Retroid viruses; Retroviridae; Lentivirus.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=11699;
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ZN_FING
ZN_FING
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CHAIN
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; M26727; AAA83391.1;
HSSP; P05888; 1AAF.
HIV; M26727; GAG$OYI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                       CHAIN
CHAIN
                                                                                                                                                                                                                                                     SMART; SM00343; ZnF C2HC; 2.

PROSITE; PS50158; ZF CCHC; 2.

AIDS; Core protein; Polyprotein; Myristate; Phosphorylation;
                                                                                                                                                                                                                                                                                                                   Pfam; PF00540; Gag_p17; Pfam; PF00607; Gag_p24; Pfam; PF00098; zf-CCHC;
                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR008919; Retrov capsid
InterPro; IPR000071; Retrovir p17.
InterPro; IPR001878; Znf_CCHC.
                                                                                               SEQUENCE
                                                                                                                        LIPID
                                                                                                                                                                                                                                                                                            PRINTS; PR00939; C2HCZNFINGER. PRINTS; PR00234; HIV1MATRIX.
                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR000721; InterPro; IPR008916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ASSEMBLY, BUDDING, MATURATION, AND INFECTION STAGES OF THE VIRAL REPLICATION CYCLE. DURING VIRAL ASSEMBLY, THE PROTEINS FORM MEMBRANE ASSOCIATIONS AND SELF-ASSOCIATIONS THAT ULTIMATELY RESULT IN BUDDING OF AN IMMATURE VIRION FROM THE INFECTED CELL. GAG PRECURSORS ALSO FUNCTION DURING VIRAL ASSEMBLY TO SELECTIVELY BIND AND PACKAGE TWO PLUS STRANDS OF GENOMIC RNA.

PTM: The p24 protein is phosphorylated, MISCELLANBOUS: THE OYI ISOLATE WAS TAKEN FROM THE BLOOD OF A HEALTHY GABONESE INDIVIDIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HEALTHY GABONESE INDIVIDUAL. SIMILARITY: Contains 2 CCHC-type zinc fingers.
                         15
  71
                                                             Similarity
 SEEIRSLYNTVATL
                         TERGRSLYNTVATL
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(Rel.
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363
377
431
447
388
                                                   Conservative
                                                                                                                                                                                                                                             Repeat; Lipoprotein.
                                                                                                 ĀĄ;

    28, Last sequence update)
    42, Last annotation update)
    [Contains: Core proteins P17,

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28,
42,
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362
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498
405
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Retrov_capsid_N.
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                                                            35.7%;
78.6%;
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  84
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                                                             Score 50;
Pred. No.
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                                                                                                                                                                                               CORE
                                                                                                            N-myristoyl glycine (in host) similarity).
                                                                                                                                                             CORE
                                                                                                                                                                        CORE
                                                                                                                                      CCHC-TYPE 2
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                                                                                                  BDFF20658DEB20B1
                                                   Mismatches
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                                                                                                                                                             PROTEIN PROTEIN
                                                                                                                                                  -TYPE
                                                                                                                                                                                                                       PROTEIN
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                                                               5.9;
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                                                                          DB
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P2.
P1.
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                                                                           1;
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                                                                                                                                                                                     (NUCLEOCAPSID PROTEIN).
                                                   2;
                                                                                                                                                                                                            (MATRIX PROTEIN).
                                                                           Length 498
                                                                                                   CRC64;
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                                                    Indels
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:
                                                   Gaps
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Query Match
Best Local Similarity
                                                                                                                                                                                                             InterPro; IPR000721; Gag_p24.

InterPro; IPR008916; Retrov_capsid_C.

InterPro; IPR008916; Retrov_capsid_N.

InterPro; IPR008919; Retrov_capsid_N.

InterPro; IPR001878; Znf_CCHC.

Pfam; PF00540; Gag_p217; I.

Pfam; PF00607; Gag_p24; I.

Pfam; PF00080; zf-CCHC; 2.

PRINTS; PR00939; C2HCZNFINGER.

PRINTS; PR00939; C2HCZNFINGER.

PRINTS; PR00934; HIVINATRIX.

SMART; SM00343; ZnF_CCHC; 2.

PROSITE; P850158; ZF_CCHC; 2.

AIDS; Core protein; Polyprotein; Myristate; Ph

AIDS; Core protein; Polyprotein; Myristate; Ph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HV1C4
                                                                                 CHAIN
ZN_FING
ZN_FING
                                            SEQUENCE
                                                                                                                          CHAIN
                                                                                                                                         CHAIN
CHAIN
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Molecular cloning and primary nucleotide sequence analysis of a distinct human immunodeficiency virus isolate reveal significant divergence in its genomic sequences.";

Proc. Natl. Acad. Sci. U.S.A. 83:8380-8384(1986).

-!- FUNCTION: PERFORMS HIGHLY COMPLEX OCCHESTRATED TASKS DURING THE ASSEMBLY, BUDDING, MATURATION, AND INFECTION STAGES OF THE VIRAL REPLICATION CYCLE. DURING VIRAL ASSEMBLY, THE PROTEINS FORM MEMBRANE ASSOCIATIONS AND SELF-ASSOCIATIONS THAT ULTIMATELY RESULT IN BUDDING OF AN INMATURE VIRION FORM THE INFECTED CELL.

GAG PRECURSORS ALSO FUNCTION DURING VIRAL ASSEMBLY TO SELECTIVELY BIND AND PACKAGE TWO PLUS STRANDS OF GENOMIC RNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P05887;
01-NOV-1988 (Rel.
01-FEB-1994 (Rel.
10-OCT-2003 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMBL the Buropean Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and formodified and this statement is not removed.
                                                                                                                                                                                                     Zinc-finger;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                entities requires a license agreement (Some send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                 HSSP; P05888; 1AAF.
HIV; M13136; GAG$CDC45.
                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; M13136; AAA44306.1; PIR; A25523; FOVWH4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FRUM R.H.
MEDLINE=87041461; PubMed=3490666;
MCDLINE=87041461; PubMed=3490666;
Casey J.M., Srinivasan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human immunodeficiency virus type 1 (CDC-451 isolat Viruses; Retroid viruses; Retroviridae; Lentivirus. NCBI_TaxID=11687;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAG polyprotein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PTM: The p24 protein is phosphorylated. SIMILARITY: Contains 2 CCHC-type zinc fingers.
                                          499
                                                                                                                                                                                                      Repeat; Lipoprotein
                                         AA;
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 Score
Pred.
                                      N-myristoyl glycine similarity).
; 023CA76C9C6F22AD (
                                                                                                         CORE
CORE
CORE
                                                                                CCHC-TYPE
                                                                                                                                                                                        SIMILARITY.
                                                                                                        PROTEIN P17
PROTEIN P24
PROTEIN P2.
PROTEIN P7 (
PROTEIN P1.
PROTEIN P6.
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DB 1;
5.9;
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                                                                                                                                                                                                                Phosphorylation;
                                                                                                                                   (NUCLEOCAPSID PROTEIN)
                                                                                                                                                             (CORE ANTIGEN).
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           Length 499
                                        CRC64;
                                                                (in host)
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RESULT 10
GAG_HVLH2
ID GAG_HATH
AC P0459
DT 13-AU
DT 01-FE
DT 10-OC
DE GAG P
CC ICLE
CC 
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Pfam; PF00607; Gag_D24; 1.
Pfam; PF00098; zf-CCHC; 2.
PRINTS; PR00939; z-CCHC; 2.
PRINTS; PR00234; HYVIMATRIX.
SMART; SM00343; ZnF C2HC; 2.
PROSITE; PS50158; ZF CCHC; 2.
    CHAIN
ZN_FING
                                                                                                                                                                 Zinc-finger;
INIT_MET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EM the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by and entities requires a license agreement (See http://www.isb-s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AIDS Res. Hum. Retroviruses 3:57-69(1987).

-!- FUNCTION: PERFORMS HIGHLY COMPLEX ORCHESTRATED TASKS DURING THE ASSEMBLY, BUDDING, MATURATION, AND INFECTION STAGES OF THE VIRAL REPLICATION CYCLE. DURING VIRAL ASSEMBLY, THE PROTEINS FORM MEMBRANE ASSCCIATIONS AND SELF-ASSOCIATIONS THAT ULTIMATELY RESULT IN BUDDING OF AN IMMATURE VIRION FROM THE INFECTED CELL. GAG PRECURSORS ALSO FUNCTION DURING VIRAL ASSEMBLY TO SELECTIVE!
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-FEB-1994
10-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAG_HV11
P04591;
                                                                                                                                                                                                        AIDS; Core protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; K03455; AAB50258.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEULLINE=87299196; PubMed=3040055;
Ratner L., Fisher A., Jagodzinski L.L.,
Gallo R.C., Wong-Staal F.;
                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                      interPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                 interPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human immunodeficiency virus type 1 (HXB2 isolate)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Complete nucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=11706;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13-AUG-1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; 1E6J; 11-DEC-00.
; 1ESK; 21-APR-00.
; 1NCP; 31-OCT-93.
; 1TAM; 12-NOV-96.
; K03455; GAG$HXB2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PTM: The p24 protein SIMILARITY: Contains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PTM. The PARTIES OF THE STRANDS OF GENOMIC RNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                polyprotein [Contains:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HV1H2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           71
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                                                                                                                                                                                                                                                                                                                                                   j IPR000721; Gag p24.

j IPR008916; Retrov capsid C.

j IPR008919; Retrov capsid N.

o; IPR000971; Retrovir p17.

o; IPR001878; Znf CCHC.

F00540; Gag_p17; I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11;
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363
377
432
448
389
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(Rel. 28,
(Rel. 42,
                                                                                                                                                                                 Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4 protein is phosphorylated.
Contains 2 CCHC-type zinc fingers.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           viruses; Retroviridae; Lentivirus
         131
362
376
431
447
499
                                                                                                                                                                                             Polyprotein,
                                                                                                                                                          3D-structure; Lipoprotein 0 BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sequences of functional clones of the AIDS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           annotation update)
Core proteins P17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence update)
CORE PROTEIN CORE PROTEIN CORE PROTEIN CCHC-TYPE 1.
                         CORE
CORE
CORE
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,.
                                                                                                                                                                                                 Myristate; Phosphorylation;
                         PROTEIN P17
PROTEIN P24
PROTEIN P2.
PROTEIN P7 ()
PROTEIN P1.
PROTEIN P6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 noved. Usage by and for commercial
(See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mitsuya H., Liou R.-S.,
                                                                  (NUCLEOCAPSID PROTEIN).
                                                                                                            (MATRIX PROTEIN) (CORE ANTIGEN).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  restrictions
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RESULT 11
GAG_HV1Y2
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Best Local S
Matches 11
                                           R InterPro; IPR000721; Gag_p24.

R InterPro; IPR008916; Retrov_capsid_C.

InterPro; IPR008919; Retrov_capsid_N.

R InterPro; IPR008919; Retrovir_p17.

R InterPro; IPR00071; Retrovir_p17.

R InterPro; IPR001878; Znf_CCHC.

R Pfam; PF00540; Gag_p17; I.

R Pfam; PF00607; Gag_p24; 1.

R Pfam; PF00607; HIVIMATRIX.

R PRINTS; PR00234; HIVIMATRIX.

R SMART; SM00343; ZnF_CCHC; 2.

R PROSITE; PS50158; ZF_CCHC; 2.

R AIDS; Core protein; Polyprotein; Myristate; Phosphorylation; Michael Core protein; Polyprotein; Myristate; Phosphorylation; Myristate; Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZN FING
LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P35962;
01-JUN-1994
01-JUN-1994
10-OCT-2003
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Li Y.,
Shaw G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LIJ
SEQUENCE FROM N.A.
MEDLINE=93021387; PubMed=1404605;
Li Y., Hui H., Burgess C.J., Price R.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-JUN-1994 (Rel. 29, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
GAG polyprotein (Contains: Core proteins P17,
               Zinc-finger;
INIT MET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   - 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Complete nucleotide sequence, genome organization, a properties of human immunodeficiency virus type 1 in for limited defectiveness and complementation.";
                                                                                                                                                                                                                                                                                                                                                the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Viruses; Retroid NCBI_TaxID=36377;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human immunodeficiency virus type 1 (YU-2 isolate) (HIV-1). Viruses; Retroid viruses; Retroviridae; Lentivirus.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VIITO1. 66:6587-6600(1992). COMPLEX ORCHESTRATED TASKS DURING THE FUNCTION: PERFORMS HIGHLY COMPLEX ORCHESTRATED TASKS DURING THE ASSEMBLY, BUDDING, MATURATION, AND INFECTION STAGES OF THE VIRA REPLICATION CYCLE. DURING VIRAL ASSEMBLY, THE PROTEINS FORM MEMBRANE ASSOCIATIONS AND SELF-ASSOCIATIONS THAT ULTIMATELY RESULT IN BUDDING OF AN IMMATURE VIRION FROM THE INFECTED CELL. GAG PRECURSORS ALSO FUNCTION DURING VIRAL ASSEMBLY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PTM: The p24 protein is phosphorylated. SIMILARITY: Contains 2 CCHC-type zinc fingers.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAG PRECURSORS ALSO FUNCTION DURING VIRAL ASSEMBLY TO SELECTIVELY BIND AND PACKAGE TWO PLUS STRANDS OF GENOMIC RNA. PTM: The p24 protein is phosphorvistod
                                                                                                                                                                                                                                                                  1F6U; 09-OCT-00.
1MFS; 17-JUN-98.
                                                                                                                                                                                                                                                                                                   A44001;
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Repeat; 3D-structure; Lipoprotein.
0 BY SIMILARITY.
1 131 CORE PROTEIN P17 (
                                                                                                                                                                                                                                                                                                   A44001
                                                                                                                                                                                                                                                                                                                -; NOT_ANNOTATED_CDS
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78.6%;
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N-myristoyl glycine (in host)
similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 50;
Pred. No.
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   PROTEIN P17 (MATRIX PROTEIN).
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5.9;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and biological
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RESULT 12
GAG_HV1A2
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Best Local
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                        InterPro; IPR008916; Retrov_capsid_C.
InterPro; IPR008919; Retrov_capsid_N.
InterPro; IPR000071; RetrovTr_p17.
InterPro; IPR001878; Znf_CCHC.
Pfam; PF00540; Gag_p17; 1.
Pfam; PF00607; Gag_p24; 1.
Pfam; PF00098; zf_CCHC; 2.
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the Euro
                                                                                                                                                                                                                                                                                                                                                                                   Science 227:484-492(1985).

Science 227:484-492(1985).

FUNCTION: PERFORMS HIGHLY COMPLEX ORCHESTRATED TASKS DURING THE FUNCTION: PERFORMS HIGHLY COMPLEX ORCHESTRATED TASKS OF THE VIRAL ASSEMBLY, BUDDING, MATURATION, AND INFECTION. THE PROTEINS FORM MEMBRANE ASSOCIATIONS AND SELF-ASSOCIATIONS THAT ULTIMATELY RESULT IN BUDDING OF AN IMMATURE VIRION FROM THE INFECTED CELL. RESULT IN GRAND FOR ALL ASSEMBLY TO SELECTIVELY GAG PRECURSORS ALSO FUNCTION DURING VIRAL ASSEMBLY TO SELECTIVELY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=85090453; PubMed=2578227; Sanchez-Pescador R., Power M.D., Barr P.J., Stempien M.M., Brown-Shimer S.L., Gee W.W., Levy J.A., Dina D., Luciw P.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-JUL-1986 (Rel. 01, Created)
01-FEB-1994 (Rel. 28, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
GAG polyprotein [Contains: Core proteins P17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAG
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                                                                                                                                                                                                                      use by non-profit institutions as long modified and this statement is not remove entitles requires a license agreement (86 or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=11685;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human immunodeficiency virus type 1 (ARV2/SF2 isolate) (HIV-1).
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                                                                                                                                                                                                                                                                                                               This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Nucleotide sequence and expression of an AIDS-associated retrovirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Viruses; Retroid viruses;
                                                                                                                                               HSSP; P05888; 1AAF.
HIV; K02007; GAG$SF2.
                                                                                                                                                                            EMBL; K02007; AAB59875.1; PIR; A03947; FOVWA2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (ARV-2).
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                                                                                                                                                                                                                                             yeen the Swiss Institute of Bioinformatics when the Swiss Institute of Bioinformatics were no restrictions European Bioinformatics Institute. There are no restrictions by non-profit institutions as long as its content is in by non-profit institutions as long as its content for comby non-profit institutions as long as its content for comby non-profit institutions as long as its content for comby non-profit institute of Bioinformatics where the profit is not removed. Usage by and for comby non-profit institute of Bioinformatics where the profit is not removed.
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CORE PROTEIN I
CORE PROTEIN I
CORE PROTEIN I
CCHC-TYPE 1.
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Pred.
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5.9;
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P7
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PR00234; HIV1MATRIX

C2HCZNFINGER

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RESULT 13
GAG_HV1B1
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Best Local
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P03347;
21-JUL-1986
                                        HSSP;
                                                            EMBL; M15654; AAA4420
PIR; A03945; FOVWH3.
                                                                                                                     This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entropean Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content use by non-profit institutions are long as its content use by non-profit institutions are long as its content use by non-profit institutions are long as its content used its content institutions are long as its content which is statement is not removed. Usage by and
                                                                                                                                                                                                                         "Complete nucleotide sequence of the AIDS virus, HTLV-III.";
Nature 313:277-284(1995).

-!- FUNCTION: PERFORMS HIGHLY COMPLEX ORCHESTRATED TASKS DURING THE
ASSEMBLY, BUDDING, MATURATION, AND INFECTION STAGES OF THE VIRJ
REPLICATION CYCLE, DURING VIRAL ASSEMBLY, THE PROTEINS FORM
MEMBRANE ASSOCIATIONS AND SELF-ASSOCIATIONS THAT ULTIMATELY
RESULT IN BUDDING OF AN IMMATURE VIRION FROM THE INFECTED CELL.
GAG PRECURSORS ALSO FUNCTION DURING VIRAL ASSEMBLY TO SELECTIVE
BIND AND PACKAGE TWO PLUS STRANDS OF GENOMIC RNA.
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ZN_FING
ZN_FING
                                                                                                 entities requires a license agreement (Some send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                    Ratner L., Haseltine W., Patarca R., Livak K.J., Starcich B. Josephs S.F., Doran E.R., Rafalski J.A., Whitehorn E.A., Baumeister K., Ivanoff L., Petteway S.R. Jr., Pearson M.L., Lautenberger J.A., Papas T.S., Ghrayeb J., Chang N.T., Gallo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human immunodeficiency virus type 1 (BH: Viruses; Retroid viruses; Retroviridae;
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10-OCT-2003
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                          InterPro;
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                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
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INIT_MET
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                                                                                                                                                                                                 PTM: The p24 protein is phosphorylated.
SIMILARITY: Contains 2 CCHC-type zinc fingers.
           , P05888; 1AAF.
M15654; GAG$BH102.
rPro; IPR000721; Gag_p24.
rPro; IPR008916; Retrov_capsid_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               polyprotein [Contains:
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11; Conserv
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                                                                           AAA44201.1;
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8; ZF_CCHC;
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42, Last
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78.6%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           annotation update)
Core proteins P17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sequence update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-myristoyl glycine similarity).
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ORE PROTEIN P17

ORE PROTEIN P24

ORE PROTEIN P2 (1)

ORE PROTEIN P7 (1)

ORE PROTEIN P1.
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                                                                                                            (See http://www.isb-sib.ch/announce/
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5.9;
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                                                                                                                         and
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                                                                                                                                                              a collaboration
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RESULT GAG HV11
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Matches 11
                                                             This SWI
between
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P04593;
13-AUG-1987
                                                This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entre European Bioinformatics Institute. There are no restitute the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CHAIN
ZN_FING
ZN_FING
LIPID
                                                                                                                                                                                              "Complete nucleotide sequence of the AIDS virus, Nature 313:277-284(1985).
                                                                                                                                                                                                                 Ratner L., Haseltine W., Patarca R., Livak K.J., St
Josephs S.F., Doran E.R., Rafalski J.A., Whitehorn
Baumeister K., Ivanoff L., Petteway S.R. Jr., Pears
Lautenberger J.A., Papas T.S., Ghrayeb J., Chang N.
Wong-Staal F.
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PRINTS; PR00234; HIVIMATRIX.
SMART; SM00343; ZDF C2HC; 2.
PROSITE; PS50158; ZF_CCHC; 2.
AIDS; Core protein; Polyprotein; Myristate; Phosphorylation;
                                                                                                                                                                                                                                                                                                                 Human immunodeficiency virus type 1 (BH: Viruses; Retroid viruses; Retroviridae;
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10-OCT-2003
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Pfam; PF00607; Gag_p24; 1.
Pfam; PF00098; zf-CCHC; 2.
                                                                                                                                                                                                                                                                      MEDLINE=85111123; PubMed=2578615;
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InterPro; IPR001878;
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BS
                                                                                                                          FUNCTION: PERFORMS HIGHLY COMPLEX ORCHESTRATED TASKS DURING ASSEMBLY, BUDDING, MATURATION, AND INFECTION STAGES OF THE V REPLICATION CYCLE. DURING VIRAL ASSEMBLY, THE PROTEINS FORM MEMBERANE ASSOCIATIONS AND SELF-ASSOCIATIONS THAT ULTIMATELY RESULT IN BUDDING OF AN IMMATURE VIRION FROM THE INFECTED CE GAG PRECURSORS ALSO FUNCTION DURING VIRAL ASSEMBLY TO SELECT
                                                                                         BIND AND PACKAGE TWO PLUS STRANDS OF GENOMIC R PTM: The p24 protein is phosphorylated.
SIMILARITY: Contains 2 CCHC-type zinc fingers.
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78.6%;
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Znf_CCHC.
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Pred. No. 6;
1; Mismatches
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P03348;
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Pfam; PF00607; Gag_p24; 1.
Pfam; PF00098; GFCCHC; 2.
PRINTS; PR00939; C2HCZNFINGER.
PRINTS; PR00234; HIVIMATRIX.
                                                                                                                                                                                                                                    MEDLINE=86245056; PubMed=2424612;
Alizon M., Wain-Hobson S., Montagnier L., Sonigo P.;
"Genetic variability of the AIDS virus: nucleotide sequence analysis
of two isolates from African patients.";
                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=85099333; PubMed=2981635;
Wain-Hobson S., Sonigo P., Danos O., Cole S.,
"Nucleotide sequence of the AIDS virus, LAV.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human immunodeficiency virus type 1 (BRU isolate) (HIV-1). Viruses; Retroid viruses; Retroviridae; Lentivirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAG polyprotein [Contains: Core
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Zinc-finger 0 BY SIMILARITY.
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InterPro; IPR008919; Retrov_capsid_N.
InterPro; IPR000071; Retrovir_p17.
InterPro; IPR001878; Znf_CCHC.
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                                                               1 46:63-74 (1986).

FUNCTION: PERFORMS HIGHLY COMPLEX ORCHESTRATED TASKS DURING THE ASSEMBLY, BUDDING, MATURATION, AND INFECTION STAGES OF THE VIRAL REPLICATION CYCLE. DURING VIRAL ASSEMBLY, THE PROTEINS FORM MEMBRANE ASSOCIATIONS AND SELF-ASSOCIATIONS THAT ULTIMATELY RESULT IN BUDDING OF AN IMMATURE VIRION FROM THE INFECTED CELL.

GAG PRECURSORS ALSO FUNCTION DURING VIRAL ASSEMBLY TO SELECTIVELY
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p05888;
K02012; G
PTM: The p24 protein is phosphorylated. SIMILARITY: Contains 2 CCHC-type zinc fingers.
                        BIND AND PACKAGE TWO PLUS STRANDS OF GENOMIC RNA. PTM: The p24 protein is phosphorylated.
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CORE PROTEIN P24
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CORE PROTEIN P1.
CORE PROTEIN P6.
CCHC-TYPE 1.
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Pfam; PP00540; Gag_D21; 1.

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Pfam; PP00607; Gag_D24; 1.

Pfam; PP00939; zf-CCHC; 2.

PRINTS; PR00334; HIVMACRIX.

PRINTS; PR00334; HIVMACRIX.

SMART; SM00343; Znf_CCHC; 2.

PROSITE; PS50158; ZF_CCHC; 2.

ROSITE; PS50158; ZF_CCHC; 2.

AIDS; Core protein; Polyprotein; Myristate; Phosphorylation;
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IPR008919; Retrov_capsid_N.
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IPR001878; Znf_CCHC.
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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Q99581 Q9WEV6 Q995R8	Q995R9 O41399 O995S0	Q9INA3 Q9IND2 Q9J661	Q9WEV6 Q9YKY7 Q9INE0		SUMMARIES
human human human	human human	human human human	human human human	Q93n27 clostridium Q98fz0 rhizobium 1 Q8au75 human immun Q9vkz9 buman immun	Description

### ALIGNMENTS

Q33N27 PRELIMINARY; PRT; 1310 AA. Q33N27; Q33N27; Q1-DEC-2001 (TrEMBLrel. 19, Last sequence update) Q1-DEC-2001 (TrEMBLrel. 25, Last annotation update) Q1-DEC-2003 (TrEMBLRel. 25, Last annotation update) Q2-DEC-2003 (TrEMBLRel. 25, Last annotation update) Q2-DEC-2003 (Q10-DEC-2003) Q2-DEC-2003 (Q10-DEC-2003) Q2-DEC-2003 (Q10-DEC-2003) Q2-DEC-2003 (Q10-DEC-2003) Q2-DEC-2003 (Q10-DEC-2003) Q3-DEC-2003 (Q10-DEC-2003) Q3-DEC-2003 (Q10-DEC-2003) Q3-DEC-2003 (Q10-DEC-2003) Q4-DEC-2003 (Q10-DEC-2003) Q	Š	SQ	FT	DR	DR R	DR	DR DR	DR	뒩	尿	DR S	7 R	DR	DR	DR	ŖĽ	RT	RΑ	RP A	Z (	200	8	S	DE	D I	] 	AC	ID	RESULT
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· ·	50.0%; Score 70; DB 2; Length	1310 1310 E 1310 AA; 150316 MW; 9EADDC914418E450 CRC6	; PS00142; ZINC_PROTEASE; 1. 1 1	PS00225; CRYSTALLIN BETAGAMMA;	PR00760; BONT	1742; Peptid	IPR000395;	IPR002160;	IPR008	06508; P:proteolysis and peptidolysis;	P:pathogenesis: TEA		F:metallopeptidase activity; IEA.	F:endopeptidase inhibitor activity;	. ! !	EMBL/	d sequence analysis of tetanus	Z., Dianliang L.:		1X1D=1513;		rmicutes; Clostridia; Clostridiales;	idium tetani.	toxin (Fragment).	(Tremburel, 25, Last	(TrEMBLrel. 19, Creat		PRELIMINARY; PRT; 1310	

Local Similarity

100.0%;

Pred. No. 0.093;

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01-MAR-2003
01-MAR-2003
01-OCT-2003
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01-OCT-2001 (TrEMBLrel. 18, Created)
01-OCT-2001 (TrEMBLrel. 18, Last sequence update)
01-MAR-2002 (TrEMBLrel. 20, Last annotation update)
Hypochetical protein mll3560.
                                                                                                                                                 MEDIJINE-22190101; PubMed=12201911;

Papathanasopoulos M.A., Cilliers T., Morris L., Mokili J.I.

Dowling W., Birx D.L., McCutchan F.E.;

"Pull-Length Genome Analysis of HIV-1 Subtype C Utilizing

Intersubtype Recombinants Isolated in South Africa.";

AIDS Res. Hum. Retroviruses 18:879-886(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA Res. 7:331-338(2000).
EMBL; AP003002; BAB50426.1; -.
Hypothetical protein; Complete
SEQUENCE 342 AA; 37582 MW;
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Viruses; Retroid viruses; Ret
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Takeuchi C., Yamada M., Tabata S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=MAFF303099;
MEDLINE=21082930; PubMed=11214968;
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Bacteria; Proteobacteria; Alphaproteobacteria; Rhizobiales;
                              McCutchan
                                                                           STRAIN=99ZASW7;
                                                                                                    SEQUENCE FROM N.A.
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                                                    Papathanasopoulos M.A.,
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       the EMBL/GenBank/DDBJ databases
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                                                       Carr J.K.,
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MEDLINE=99210134; PubMed=10195759;
Naghavi M.H., Salminen M.O., Sonnerborg A., Val
"DNA sequence of the long terminal repeat of hu
virus type 1 subtype A through G.";
AIDS Res. Hum. Retroviruses 15:485-488(1999).
EMBL; AF106178; AAD16932.1; -.
GO; GO:0019012; C:virion; IEA.
GO; GO:0005198; F:structural molecule activity.
InterPro; IPR000071; Retrovir_D17.
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GO; GO:0003676; F:mucleic acid binding; IE/
GO; GO:0005198; F:structural molecule activ
GO; GO:0005198; F:structural life cycle; IEA.
InterPro; IPR000721; Gag p24.
InterPro; IPR000071; Retrovrp17.
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InterPro; IPR008919; Retrov capsid N.
InterPro; IPR0018919; Retrov Capsid N.
InterPro; IPR0018919; Retrov Capsid N.
InterPro; IPR0018919; TROPERO N.
INTERPORATOR GAG P17. T.
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01-MAY-1999
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PRINTS; PRO0234; HIVUMATRIX.
SMART; SM00343; ZDF CZHC; 2.
PROSITB; PS50.58; ZF CCHC; 2.
SEQUENCE 499 AA; 55941 MW;
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Pfam; PF00540; Gag_p17;
Pfam; PF000607; Gag_p24;
Pfam; PF00098; zf-CCHC;
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PRINTS; PR00234; HIVIMA
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85.7%;
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Pred. No.
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RESULT 6
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Best Local S
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NON_TER
                                                                                                                                                                                                                                                                                            Naghavi M.H., Salminen M.O., Sonnerborg A., VIDNA sequence of the long terminal repeat of virus type 1 subtype A through G.";
AIDS Res. Hum. Retroviruses 15:485-488(1999)
EMBL; AF106193; AAD10538.1; -.
GO; GO:0005198; F:structural molecule activity
                                                                                                                                                                                                                                       InterPro; IPR000071; Retrovir_p17.
Pfam; PF00540; Gag_p17; 1.
PRINTS; PR00234; HIVIMATRIX.
                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=99210134; PubMed=10195759;
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01-MAY-1999
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AIDS; Core protein; Polyprotein.
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EMBL; AF106192; AAD16937.1; -.
GO; GO:0019012; C:virion; IEA.
GO; GO:0005198; F:structural molecule activity; IEA.
InterPro; IPR000071; Retrovir_p17.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-OCT-2003
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PRINTS; PR00234; HIV1MATRIX.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Viruses; Retroid viruses; Retroviridae; Lentivirus
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GAG.
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_TaxID=11676;
    48
                                          15
                                                                                                                                                                                                                    Core protein; Polyprotein.
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12; Conserv
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TEELRSLYNTVATL 61
                                     TERGRSLYNTVATL
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82 AA;
                                                                                Conservative
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                                                                                                                                                           9475 MW;
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85.7%;
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                                                                       Score 54; DB Pred. No. 1.3; O; Mismatches
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n) (Fragment).
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Last sequence update)
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1.3;
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RESULT 7
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01-OCT-2000
01-OCT-2000
01-OCT-2003
                                                                                                                                                MEDIINE 99260387; PubMed=10331444;

Mokili J.L., Wade C.M., Burns S.M., Cutting W.A., Bog Green S.D., Peutherer J.F., Simmonds P.;

"Genetic heterogenaity of HIV type 1 subtypes in Kimp Democratic Republic of Congo.";

AIDS Res. Hum. Retroviruses 15:655-664(1999).

EMBL; AF144846; AR69072 1; -

EMBL; AF144846; AR69072 1; -

GO; GO:0019012; C:virion; IEA.

GO; GO:0005198; F:structural molecule activity; IEA.
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                                         PRINTS; PR00234; natron...
AIDS; Core protein; Polyprotein.
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Viruses; Retroid viruses; Retroviridae; Lentivirus
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01-OCT-2000
01-OCT-2000
01-JUN-2003
                                                                                          Pfam; PF00540; Gag_p17; 1.
PRINTS; PR00234; HIV1MATRIX.
                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A. STRAIN=DRCM17;
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                                                                                                                                         interPro;
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Mokili J.L., Wade C.M., Burns S.M., Cutting W. Green S.D., Peutherer J.F., Simmonds P.;
"Genetic heterogeneity of HIV type 1 subtypes Democratic Republic of Congo.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; AF144809; AAF69035.1; -.
GO; GO:0019012; C:virion; IEA.
GO; GO:0005198; F:structural molecule activity; IEA
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S; PR00234; HIV1MATRIX.
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                                                                                                                                  IPR000071; Retrovir_p17
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    102 AA;
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                           102
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(TrEMBLrel. 15, Last sequence update)
(TrEMBLrel. 24, Last annotation update)
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11423 MW; 69A9761220982C5E CRC64;
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Last annotation update)
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                                                                                                                                                                                                                                                             Kimpese, rural
                                                                                                                                                                                                                                                                                                         Bopopi J.M.,
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EMBL; AF144817; AAF69043.1; -.
GO; GO:0019012; C:virion; IEA.
GO; GO:0005198; F:structural molecule activi
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Mokili J.L., Wade C.M., Burns M.M., Cutting W.A., Bopopi of Green S.D., Peutherer J.F., Simmonds P.;
"Genetic heterogeneity of HIV type 1 subtypes in Kimpese, Democratic Republic of Congo.";
Democratic Republic of Congo.";
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Pfam; PF00540; Gag_p17; 1.
PRINTS; PR00234; HTV1MATRIX.
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  J. Acquir. Immune Defic. Syndr. Hum. EMBL; AF191484; AAF37550.1; -. GO; GO:0019012; C:virion; IEA.
                                                                                                                Iversen A.K., Learn G.H.,
Skinhoj P.;
                                                                                                                                                                                                                         Viruses; Retroid viruses; Retroviridae; Lentivirus
NCBI_TaxID=11676;
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                                                                "Presence of multiple HIV subtypes and a high frequency of subtype chimeric viruses in heterosexually infected women.";
                                                                                                                                                                                                                                                                              Human immunodeficiency virus
GO; GO:0019012; C:virion;
                                                                                                                                                                STRAIN=DK96AIF41;
                                                                                                                                                                                   SEQUENCE FROM N.A.
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12; Conserv
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'~~ ~~1vprotein) (Fragment).
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(TrEMBLrel. 15, Last sequence update)
(TrEMBLrel. 25, Last annotation updat
(Gag polyprotein) (Fragment).
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                                                                                                                                      Fugger L.,
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                                               Retrovirol. 22:325-332(1999)
                                                                                                                                          Gerstoft J.,
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RESULT 11

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Pfam; PF00540; Gag_p17; 1.
PRINTS; PR00234; HIVMATRIX.
AIDS; Core protein; Polyprotein.
NON_TER 1 19 119
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Q995R9;
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NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Immunological and virological characteristics of HIV infected individuals in different risk groups in Madras, India."; Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
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01-JUN-2003
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GO; GO:0019012; C:virion; IEA.
GO; GO:0005198; F:structural molecule activity; IEA
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PRINTS; PR00234; HIVIMATRIX.
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01-JAN-1998
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Sherefa
                                                                                                                                 Human immunodeficiency virus 1.
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01-JUN-2003
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                       STRAIN=ET2555
                                            SEQUENCE FROM N.A.
                                                                                   NCBI_TaxID=11676;
                                                                                                                 Viruses; Retroid
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                                                                                                                                                                           998 (TrEMBLrel. 05, Created)
998 (TrEMBLrel. 05, Last sequence update)
003 (TrEMBLrel. 24, Last annotation update)
polyprotein) (Fragment).
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121 AA;
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(TrEMBLrel. 17, Last sequence update)
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  Johansson
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                                                                                                                                                                                                                                                                                            PRELIMINARY;
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                                                                                                                 viruses;
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; 13968 MW;
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                                                                                                                   Retroviridae; Lentivirus
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RESULT 14
Q995S
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01-JUN-2001
01-JUN-2003
Viruses; Retroid
NCBI_TaxID=11676;
[1]
                                                                                            Q995S1,
Q995S1;
                                         Gag protein GAG.
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01-JUN-2001
01-JUN-2003
                             Human immunodeficiency virus
                                                                                                                                                                                                                                                                                                                 "Immunological and virological characteristics of HIV infected individuals in different risk groups in Madras, India."; Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases. EMBL; AR250269; AAR34983.1; GO; GO:0019012; C:virion; IEA. GO; GO:0005188; F:structural molecule activity; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q995S0;
                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                     NON_TER
                                                                                                                                                                                                                                                                                 AIDS;
                                                                                                                                                                                                                                                                                       Pfam; PF00540; Gag_p17; 1.
PRINTS; PR00234; HIVIMATRIX.
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                                                                                                                                                                                                                                                                                                                InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                      Human immunodeficiency virus 1.
Viruses: Retroid viruses; Retroviridae; Lentivirus
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GO; GO:0005198; F:structural molecule activity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Distribution of HIV-1 subtypes in Ethiopia.";
Submitted (APR-1996) to the EMBL/GenBank/DDBJ databases.
EMBL; U56345; AAB67649.1; -.
                                                                                                                                                                                                                                                                                                                                                                                        Yirrell D.L.;
                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=Y8
                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00540; Gag_p17; 1.
PRINTS; PR00234; HIVIMATRIX.
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                                                                                                                                                          TEELRSLYNTVATL 59
                                                                                                                                                                              TERGRSLYNTVATL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TEELRSLYNTVATL 85
                                                                                                                                                                                                                                                                                                         IPR000071; Retrovir_p17.
                                                                                                                                                                                                                                               124
124 AA;
                                             (TrEMBLrel. 17, Created)
(TrEMBLrel. 17, Last sequence update)
(TrEMBLrel. 24, Last annotation update)
(Gag polyprotein) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 AA;
                                                                                                                                                                                                     Conservative
                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              (TrEMBLrel. 17, Created)
(TrEMBLrel. 17, Last sequence update)
(TrEMBLrel. 24, Last annotation update)
(Aar nolyprotein) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
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                   viruses;
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               Retroviridae; Lentivirus
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Pred. No. 2.1;
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Pred. No. 2.1;
                                                                                                     PRT;
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GO; GO:0005198; F:structural molecule activity; IEA.
InterPro; IPR000071; Retrovir_p17.
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                                                                                                                           Pfam; PF00540; Gag_p17; 1.
PRINTS; PR00234; HIV1MATRIX.
                                                                                                                                                                                EMBL; AF115451; AAD21596.1;
                                                                                                                                                                                        Emerging Infect. Dis. 5:65-74(1999).
                                                                                                                                                                                                   epidemic in Brazil.";
                                                                                                                                                                                                            "Dual and recombinant infections: an integral
                                                                                                                                                                                                                       Ramos A., Tanuri A., Schechter M., Rayfield M.A.,
Cabral M.C., Bandea C.I., Baggs J., Pieniazek D.,
                                                                                                                                                                                                                                   MEDLINE=99181514; PubMed=10081673; Ramos A., Tanuri A., Schechter M.,
                                                                                                                                                                                                                                                                                                Human immunodeficiency virus 1.
Viruses; Retroid viruses; Retroviridae; Lentivirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Immunological and virological characteristics of HIV infected individuals in different risk groups in Madras, India."; Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases. EMBL; AP250268; AAX34982.1; GO; GO:0019012; C:virion; IEA. GO; GO:005188; F:structural molecule activity; IEA.
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                                                                                                               Core protein; Polyprotein.
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S; PR00234; HIV1MATRIX.
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126 AA;
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126 AA;
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85.7%;
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85.7%;
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Pred. No. 2.
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                                                                                6EC9E47F2FD3CFA0 CRC64;
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Aay09326 Lipidated
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Aab12419 HCMV lipi
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Aae05437 Human cyt
Aau10851 Human cyt
Aau110851 Human cyt
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Aau11422 Synthetic
Abb79182 Human Typ
Aaw49253 N10 polye
Aaw49254 N11 polye
Aaw30491 Human TNF
Aay49254 N11 polye
Aaw30499 Human TNF
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invention relates to the generation of a lipopeptid invention relates to the generation of a lipopeptid st one auxiliary T epitope, at least one cytotoxic T tope and at least one lipid residue with (i) the epitopes, being separated independ	w lipopeptide containing lipid regions and two epitopes, all s peptide spacers that impart hydrophilicity, useful in vaccine ample 1: Page 9: 35m: French	I; 1999-583113/50.	Gal FA, Guillet JG, Gahery SH, Gras MH, Melnyk O, Tarta	PA (INRM ) INSERM INST NAT SANTE & RECH MEDICALE. PA (CNRS ) CNRS CENT NAT RECH SCI. PA (INSP ) INST PASTEUR LILLE. XX	PR 07-APR-1998; 98FR-00004323.	PF 07-APR-1998; 98FR-00004323.	PD 08-OCT-1999.	PN FR2776926-A1. XX	y dified-site 1 /note= "contains palmitoyl residue attached atterminus and on the epsilon carbon of the side	OS Synthetic. OS Homo sapiens. XX	popeptide; epitope; cytotoxic T lymphocyte; CTL; lipid; spa ectrical charge; hydrophilicity; vaccine; immune response; man immunodeficiency virus; hepatitis B virus; papilloma vi lanoma; malaria; parasite.	popeptide #3.	DT 18-JAN-2000 (first entry) XX	AC AAY53552;	RESULT 1 AAY53552 ID AAY53552 standard; protein; 28 AA.	ALIGNMENTS	26 77 55.0 750 3 AAY92638 Aay92638 Aay92640 28 76 54.3 25 3 AAY92640 Aay92651 Aax92651 29 76 54.3 29 2 AAR83561 Aax65389 31 76 54.3 37 2 AAR65389 Aax65389 32 76 54.3 47 2 AAR62723 Aax62723 Aay92652 Aax66272 Aax62723 Aay92652 Aax66272 Aax62723 Aay92652 Aax62723 Aay92652 Aax62723 Aay92652 Aax62723 Aay92652 Aax62723 Aay92652 Aax62723 Aax62723 Aax62723 Aay92652 Aax62723 Aax62724 Aax62723 Aax62723 Aax62723 Aax62723 Aax62723 Aax62723 Aax627281 Aax62723 Aax627281 Aax627284 Aax6272
n of a l cone cy with (i	and two epitopes, a city, useful in vac		Gras MH, Melnyk O, Tart						lmitoyl residue attached a epsilon carbon of the sid		<pre>ymphocyte; CTL; lipid; vaccine; immune respons itis B virus; papilloma</pre>					GNMENTS	

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Synthetic
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                                                                                                                      The present sequence represents a lipid-tailed protein. The lipid moiety is able to cross the mucosal membrane, and deliver an antigen to the immune system. The lipoprotein is administered to a mucosal membrane to induce an immune response. The lipoprotein induces a B cell and/or a T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09-DEC-1999;
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                                                                                                                                                                                                                                                                                                                                Inducing systemic immune response comprises mucosal administration lipid-tailed proteins or lipopeptide in absence of adjuvants.
                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2001-451597/48.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (INSP ) INST PASTEUR. (UYLI-) UNIV LILLE 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                          response. The lipoprotein is used to provide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19;
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                                                                                                                                                                                                                                                                        Page 26; 34pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gras-Masse
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note= "amidated residue with palmitoyl lipid residue with 16 carbon atoms attached via an epsilon bond"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    peptide;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Η,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Benmohamed
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .5e-08;
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                                                                                             intranasal or
                                                                                                                                                                                                             The lipid moiety
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Query Match

63.2%;

Score 88.5;

B 4.

Length 25;

Conservative

Sequence 25

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RESULT 3
AAY53551
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           Query Match
Best Local Similarity
                                                                                  The invention relates to the generation of a lipopeptide comprising at least one auxiliary T epicope, at least one cytotoxic T lymphocyte (CTL) epitope and at least one lipid residue with (i) the epitopes and lipid portion and (ii) the epitopes, being separated independently by peptide spacers. These spacers comprise sequences of amino acids which carry an overall electrical charge in neutral media to ensure that the lipopeptide is hydrophilic. This peptide represents an example of them lipopeptide is the invention. It contains 2 lipid residues attached at the N-terminal end of the molecule and 2 epitopes separated by the spacer residues Serser and Ala-Ala-Ala. Peptides AAY53301-Y55349 represent peptide epitopes used in the generation of the lipopeptides. These are used in therapeutic or prophylactic compositions and vaccines to induce specific immune responses against human immunodeficiency, hepatitis B or papilloma viruses; p53 of melanoma or the malaria parasite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Lipopeptide; epitope; cytotoxic T lymphocyte; CTL; lipid; spacer; electrical charge; hydrophilicity; vaccine; immune response; HIV; human immunodeficiency virus; hepatitis B virus; papilloma virus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-APR-1998;
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Modified-site
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lipopeptide #2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-JAN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY53551 standard;
                                                                                                                                                                                                                                                                                                                     Example 1; Page 9; 35pp; French.
                                                                                                                                                                                                                                                                                                                                                  New lipopeptide containing lipid regions and two epitopes, by peptide spacers that impart hydrophilicity, useful in va
                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 1999-583113/50.
                                                                                                                                                                                                                                                                                                                                                                                                                               Le Gal FA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                            (INRM ) INSERM INST NAT SANTE & RECH MEDICALE (CNRS ) CNRS CENT NAT RECH SCI. (INSP ) INST PASTEUR LILLE.
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                                                         29
                                                         AA:
                                                                                                                                                                                                                                                                                                                                                                                                                               Guillet JG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98FR-00004323.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note= "contains palmitoyl residue attached at
terminus and on the epsilon carbon of the side
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein;
           62.1%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                 Gahery
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           Score 87; DB 2;
Pred. No. 9.4e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                 SH,
                                                                                                                                                                                                                                                                                                                                                                                                                                  Gras MH,
                           Length 29
                                                                                                                                                                                                                                                                                                                                                                                                                                  Melnyk 0,
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RESULT 4
AAW44891
ID AAW4
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IN
                                                              The present lipidated vaccine comprises of two palmitic acid molecules attached to a peptide portion. The peptide portion contains a helper T-CC lymphocyte (HTL) epitope attached to a spacer which in turn is attached to a cytotoxic T-lymphocyte (CTL) epitope. The CTL epitope is referred to CC as the 495 peptide as it represents residues 495-503 of pp65 from human C cytomegalovirus (HCMV) laboratory strains AD169 and Towne. The invention CC provides peptides which are immunogenic epitopes that are recognised by CC the CD8+ class I major histocompatibility complex (MHC) restricted CC cytotoxic T-lymphocytes of patients harboring latent HCMV infection. The CD peptides are claimed to be capable of activating cytotoxic T-cell CC lymphocytes in the absence of active viral replication, and thus are CC useful for eliciting a cellular immune response against HCMV by normal and immunodeficient subjects. The immunological peptides can also be formulated as vaccines, such as the present one, which are claimed to be system response to a HCMV infection or protecting against reactivation of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
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14-OCT-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Immunoreactive human cytomegalovirus epitopes - useful to vaccinate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (CITY )
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1998-297862/26
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xic T-lymphocyte; MHC; major histocompatibility
T-lymphocyte; HTL; CTL; palmitic acid.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             infection.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  York J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OF HOPE
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97US-00950064
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peptide"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               peptide;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Helper T-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29
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495

Query Match

59.3%;

Score

83;

DB 2;

Length

29;

Sequence 29

A

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RESULT 5
AAW48992
ID AAW4
XX AAW4
XX AAW4
XX AAW4
XX Inmu
XW Cyto
CX Synt
XX Inmu
XW Cyto
CX Synt
XX Inmu
XW Cyto
CX Synt
FT Regi
FT R
                  The present lipidated vaccine comprises of three palmitic acid molecules CC attached to a peptide portion. The peptide portion contains a helper T-CC lymphocyte (HTI) epitope attached to a spacer which in turn is attached CC to a cytotoxic T-lymphocyte (CTI) epitope. The CTI epitope is referred to CC as the 495 peptide as it represents residues 495-503 of pp65 from human CY cytomegalovirus (HCMV) laboratory strains AD169 and Towne. The invention CY provides peptides which are immunogenic epitopes that are recognised by CY the CD8+ class I major histocompatibility complex (MHC) restricted CY towned CY cytotoxic T-lymphocytes of patients harboring latent HCMV infection. The CY peptides are claimed to be capable of activating cytotoxic T-cell (lymphocytes in the absence of active viral replication, and thus are CY useful for eliciting a cellular immune response against HCMV by normal CX and immunodeficient subjects. The immunological peptides can also be CY useful for protecting against HCMV infection, augmenting the immune CX system response to a HCMV infection or protecting against reactivation of CX altern termore to a HCMV infection or protecting against reactivation of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
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Matches 18; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 1998-297862/26
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Diamond DJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12-NOV-1996;
14-OCT-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Immunoreactive human cytomegalovirus epitopes - useful to vaccinate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (CITY ) CITY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Lipidated vaccine 2 against human cytomegalovirus infection.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   w
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OF HOPE
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97US-00950064.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "Cytotoxic T-cell epitope referred
peptide"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'note= "Helper T-cell epitope"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      note=
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA
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                                                                                       The present invention describes immunologically active peptides (IAPs) acapable of eliciting a cellular immune response to human cytomegalovirus (CC (hCMV). The IAP can be used in a (cellular) vaccine to augment the immune consists the response to HCMV, or to provide immunity against HCMV. The IAP (cellular) vaccine can also protect an individual having a latent HCMV confection from reactivation. An antigen presenting cell can be used to determine the presence or absence of HCMV-infected Tlymphocytes. The confection from reactivation and also be used to provide immunity against HCMV. The IAP encoding DNA can also be used to provide cytotoxic Tlymphocytes. The antigen presenting cells primed with the CC HCMV. They can also detect active HCMV infection or exposure to HCMV. CHECK can be used to provide to meaning they can also detect active HCMV infection or exposure to HCMV. CHECK complications in, e.g. immunosuppressed patients. The IAP vaccines impart immunity to bone marrow transplant recipients, solid organ recipients, the need for ex vivo expansion of HCMV-specific cytotoxic Tlymphocytes (which requires sophisticated laboratory setup and is highly laborated the need for ex vivo expansion of hcmv-specific cytotoxic Tlymphocytes (which requires sophisticated laboratory setup and is highly laborated intensive and costly). The present sequence represents a lipidated
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Query Match
Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Diamond DJ,
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                                                Sequence 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cytomegalovirus.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human cytomegalovirus; hCMV; immunologically active peptide; vaccine; immune response; cytotoxic T lymphocyte; CTL; immunostimulation; infection; immunosuppression; bone marrow transplant; solid organ; heart;
                                                                                                                                                                                                                                                                                                                                                                                                                               Example 11; Page 32; 64pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (CITY ) CITY OF HOPE
                                                                               vaccine peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Immunogenic peptide cytotoxic T lymphocyte epitopes of human
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                                                                               from the present invention
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59.3%;
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Pred. No. 4.2e
2; Mismatches
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Pred.
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6;
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3 QYIKANSKFIGITERGRSLYNTVATL 28

Matches Query Match Best Local

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Mismatches

4.2e-06; ches 6; DB 2;

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Length 29;

Similarity

59.3%; 69.2%;

Score 83; Pred. No.

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RESULT 7
                                      CC capable of eliciting a cellular immunologically active peptides (IAPs) CC capable of eliciting a cellular immune response to human cytomegalovirus (C (hCWV). The IAP can be used in a (cellular) vaccine to augment the immune System response to HCMV, or to provide immunity against HCMV. The IAP CC (ellular) vaccine can also protect an individual having a latent HCMV infection from reactivation. An antigen presenting cell can be used to CC determine the presence or absence of HCMV-infected Ilymphocytes. The CC cimmunity against HCMV. The IAP can be used to provide cytotoxic Tlymphocytes. The antigen presenting cells primed with the CC IAPs can be used as diagnostic reagents to detect immunostimulation by CC HCMV. They can also detect active HCMV infection or exposure to HCMV. CC complications in, e.g. immunosuppressed patients. The IAP vaccines impart CC immunity to bone marrow transplant recipients, solid organ recipients, heart patients. AIDS patients or women of child-bearing years, without the need for ex vivo expansion of HCMV-specific cytotoxic Tlymphocytes (which requires sophisticated laboratory setup and is highly labor-cc intensive and costly). The present sequence represents a lipidated concerns the persent invention
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Example 11; Page 32; 64pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cytomegalovirus.
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Sequence 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (CITY ) CITY OF HOPE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Immunogenic peptide cytotoxic T lymphocyte epitopes of human
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98US-00021298.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
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밁 Š

Matches

Conservative

2

Pred. No. 4.2e-06; 2; Mismatches 6;

Indels

0

Gaps

0;

69.2%;

Best Local Similarity

# QYIKANSKFIGITEAAANLVPMVATV 29

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RESULT 8
AAB12418
                                                                                                                                                                                                                  Human herpesvirus 5.
                                                                                                                                                                                                                                         HCMV lipidated vaccine peptide SEQ ID NO:13.
                                                                                                                                                                                                                         immunosuppressive; immunity; immunisation.
                                                                                                                                                                                                                            Immunogenic; cytotoxic T lymphocytes; CTL; cytomegalovirus; HCMV;
infection; immune response; vaccine; immunostimulant; antiviral;
                                                                                                                                                                                                                                                   20-OCT-2000
                                                                                                                                                                                                                                                           AAB12418;
                                                                                                                                                                                                                                                                 AAB12418 standard; peptide; 29
                                                                                                                                                                                                                                                  (first
                                                                                                                                                                                                                                                  entry
                                                                                                                                                                                                                                                                  A
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US6074645-A. Modified-site /note= "N-terminally attached to (Pam)2 where Pam
palmitic acid" Location/Qualifiers

12-NOV-1996; 14-OCT-1997; 13-JUN-2000. 11-MAY-1998; 96US-00747488. 97US-00950064. 98US-00021298. 98US-00075257

(CITY ) CITY OF HOPE.

10-FEB-1998;

Diamond DJ,

WPI; 2000-430383/37

New immunogenic peptides useful for providing immunity against cytomegalovirus (CMV) infections, are capable of eliciting cellular response to human CMV

Example 11; Col 15; 18pp; English

CC The present invention describes a cellular vaccine (I), which elicits a CC MRC Class I cellular immune response to human cytomegalovirus (HCMW), and CC comprises a peptide vi): (i) selected from (i) - (v), provided that (i) is not CC another peptide (vi): (i) Asn Xaal Val Pro Met Val Ala Thr Xaa2; (ii) Tyr CC Ala Leu Xaa3; (iv) Thr Pro Arg Val Thr Gly Gly Gly Ala Xaa6; and (v) Phe CC Ala Leu Xaa5; (iv) Thr Pro Arg Val Thr Gly Gly Gly Ala Xaa6; and (v) Phe CC Xaa2 = Val, Ala, Cys, Ile, Leu or Thr; Xaa3 = Ser, Thr or Leu; Xaa4 = Val CC Or Thr; Xaa5 = Leu, Arg or Lys; Xaa6 = Leu, Met or Phe; and (i) is not CC Asn Leu Val Pro Met Val Ala Thr Val (vi). The peptides are useful for CC providing immunity against future infections by HCMV, and for augmenting CC and is at risk for reactivation of HCMV infection. The peptides are also CC child-bearing years, without the need for ex vivo expansion of HCMV-CC specific CTL. These peptides can directly stimulate cycotoxic TC degree of immunostimulation caused by HcMV. These may also be used to CC distinguish individuals who are seropositive from those who have not been cCC distinguish individuals who are seropositive from those who have not been cCC distinguish individuals who are seropositive from those who have not been pathway for HCMV proteins. The present sequence represents a peptide used to in the exemplification of the present invention

Sequence 29 ΑA;

59.3%; Score 83; DB w -Length 29;

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RESULT 9
AAB12419
ID AAB1
XX AAB1
XX AAB1
XX Inmu
XX I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12-NOV-1996;
14-OCT-1997;
10-FEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cytomegalovirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New immunogenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-430383/37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rmmune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (CITY ) CITY OF HOPE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11-MAY-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human herpesvirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAB12419;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Immunogenic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HCMV lipidated vaccine peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB12419 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        immunosuppressive; immunity; immunisation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       response to human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Diamond DJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QYIKANSKFIGITERGRSLYNTVATL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  immune response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cytotoxic T lymphocytes; CTL; cytomegalovirus; HCMV; mmune response; vaccine; immunostimulant; antiviral;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-00021298
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       peptides useful for providing (CMV) infections, are capable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note= "N-terminally attached to (Pam)3 where Pam is
palmitic acid"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CMV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NO:14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     immunity against of eliciting cellular
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Example 11; Col 15; 18pp; English.

CC MHC class I cellular immune response to human cytomegalovirus (HCMV), and comprises a peptide selected from (i) - (v), provided that (i) is not can be provided (vi): (i) Asn Xaal Pro Met Val Ala Thr Xaa2; (ii) Tyr CC Asa3 Glu His Pro Thr Phe Ser Gln Tyr; (iii) Phe Xaa4 Phe Pro Lys Asp Val CC Ala Leu Xaa5; (iv) Thr Pro Arg Val Thr Gly Gly Gly Ala Xaa6; and (v) Phe CC Pro Thr Lys Asp Val Ala Leu, where: Xaa1 = Leu, Ile, Met, Thr or Val; CC Xaa2 = Val, Ala, Cys, Ile, Leu or Thr; Xaa3 = Ser, Thr or Leu, Xaa4 = Val CC Or Thr; Xaa5 = Leu, Arg or Lys; Xaa6 = Leu, He, Met, Thr or Val; CC Asn Leu Val Pro Met Val Ala Thr Val (vi). The peptides are useful for CC Asn Leu Val Pro Met Val Ala Thr Val (vi). The peptides are useful for CC and is at risk for reactivation of HCMV infection. The peptides are also consider the immune response of an individual who is latently infected with HCMV consecution for imparting immunity to a bone marrow transplant recipient, a colid organ recipient, a heart patient, an AIDS patient or a woman of CC child-bearing years, without the need for ex vivo expansion of HCMV consecution of HCMV. These peptides can directly stimulate cytotoxic TC lymphocytes (CTL) in vitro, thus can be used in an assay to determine the CC distinguish individuals who are seropositive from those who have not been constituted to HCMV and in the study of the Class I antigen-processing to be approached to HCMV and in the study of the Class I antigen-processing. The present invention describes a cellular vaccine (I), which elicits MHC Class I cellular immune response to human cytomegalovirus (HCMV). The present sequence represents a

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ARBSULT 10
AABO5438
ID AABO5438
AC AAEO5
XX AAEO5
XX AAEO5
XX DT 24-SE
XX Humar
XX Homar
XX H
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Best Local (
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14-OCT-1997;
10-FEB-1998;
11-MAY-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human cytomegalovirus; HCMV; infection; vaccine; cytotoxic T lymphocyte; CTL; CTL precursor; CTLp; Class I antigen; major histocompatibility complex; MHC; cellular immune response; CTL activator; CTLp activator; immunostimulant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24-SEP-2001
                       variants thereof, capable of eliciting a cellular immune response to human cytomegalovirus (HCMV) in humans. The peptides are capable of directing human cytotoxic T lymphocytes (CTL) to recognise and lyse h cells infected with HCMV. Such immunologically active peptides, in association with an major histocompatibility complex (MHC) Class I molecule, are recognised by CTLs of individuals having a latent (inactive) HCMV infection. Vaccines comprising these peptides are use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US6251399-B1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Region
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Modified-site
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                                                                                                                                                                                                                                                                                                                           New peptides that are immunogenic epitopes of the human cytomegalovirus (CMV), useful for activating cytotoxic T lymphocytes (CTL) or CTL precursors to elicit an immune response against human CMV by normal or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Diamond
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (DIAM/)
(YORK/)
                                                                                                                                                                                                    The invention relates to immunologically active peptides, and functional
                                                                                                                                                                                                                                                        Example 11; Col 16; 17pp; English.
                                                                                                                                                                                                                                                                                                           immunodeficient subjects.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                                                               2001-431950/46.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YORK J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dď,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000US-00534639.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              York J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            96US-00747488.
97US-00950064.
98US-00021298.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98US-00075257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                note=
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69.2%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (HCMV) vaccine peptide #2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Amino acid spacer"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Cysteine modified with palmitic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTL_epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HTL_epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A
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                               comprising these peptides are useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 29;
                                                                                                                                   to recognise and lyse human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
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RESULT 11
AAE05437
ID AAE05
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for activating CTLs and CTL precursors (CTLp), particularly for eliciting a cellular immune response against HCMV by normal and immunodeficient subjects. The peptides may be used in an assay for determining the degree of immunostimulation caused by HCMV. The peptides may also be used for distinguishing individuals who are seropositive from those who have not been exposed to HCMV (seronegative individuals). The present sequence is human cytomegalovirus lipidated vaccine peptide with covalent HTL and CTL
                                                                                                                                                                                   12-NOV-1996;
14-OCT-1997;
10-FEB-1998;
11-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 29 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAE05437 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       epitopes
                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTL; CTL precursor; CTLp; Class I antigen; major histocompatibility complex; MHC; cel
                                                                                                                                                                                                                                                                                                                        Region
                                                                                                                                                                                                                                                                                                                                               Region
                                                                                                                                                                                                                                                                                                                                                                     Region
                                                                                                                                                                                                                                                                                                                                                                                                                               Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24-SEP-2001
                                                       New peptides that are immunogenic epitopes of the human cytomegalovirus (CMV), useful for activating cytotoxic T lymphocytes (CTL) or CTL precursors to elicit an immune response against human CMV by normal or
                                                                                                                                                  (DIAM/)
(YORK/)
                                                                                                                                                                                                                                           27-MAR-2000;
                                                                                                                                                                                                                                                                  26-JUN-2001
                                                                                                                                                                                                                                                                                         US6251399-B1.
                                                                                                                                                                                                                                                                                                                                                                                             Modified-site
                                                                                                      WPI; 2001-431950/46.
                                                                                                                             Diamond
                                                                                                                                                                                                                                                                                                                                                                                                                                                      activator; CTLp activator; immunostimulant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cytomegalovirus; HCMV; infection; vaccine; cytotoxic T lymphocyte;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cytomegalovirus (HCMV) vaccine peptide #1
                                                                                                                                                                                                                                                                                                                                                                                                                            cytomegalovirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   l Similarity
18; Conserv
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                                                                                                                           DJ,
                                                                                                                                                  DIAMOND D J.
YORK J.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                           2000US-00534639
                                                                                                                             York J;
                                                                                                                                                                                               97US-00950064
98US-00021298
                                                                                                                                                                                     98US-00075257
                                                                                                                                                                                                                       96US-00747488
                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                  8.
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                                                                                                                                                                                                                                                                                                                /label=
                                                                                                                                                                                                                                                                                                                                      'note=
                                                                                                                                                                                                                                                                                                                                                           label
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                59.3%;
                                                                                                                                                                                                                                                                                                                                                   . 20
                                                                                                                                                                                                                                                                                                                                                           = HTL_epitope
                                                                                                                                                                                                                                                                                                                                                                                 "Lysine modified with palmitic acid"
                                                                                                                                                                                                                                                                                                                                       "Amino acid spacer"
                                                                                                                                                                                                                                                                                                                CTL_epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 83; DB 4; Lupred, No. 4.2e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cellular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
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Example 11; Col

16; 17pp; English.

invention relates

to

immunologically active peptides,

and functional

immunodeficient

subjects.

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កិត្តភិពិត្តភិពិត្តភិពិត្តិ និង្គិតិ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CC variants thereof, capable of eliciting a cellular immune response to CC directing human cytomegalovirus (HCMV) in humans. The peptides are capable of CC directing human cytotoxic T lymphocytes (CTL) to recognise and lyse human cytomegalovirus (HCMV) is such immunologically active peptides, in CC cals infected with HCMV. Such immunologically active peptides, in CC molecule, are recognised by CTLs of individuals having a latent CC (inactive) HCMV infection. Vaccines comprising these peptides are useful CC for activating CTLs and CTL precursors (CTLp), particularly for eliciting CC acellular immune response against HCMV by normal and immunodeficient CC subjects. The peptides may be used in an assay for determining the degree of immunostimulation caused by HCMV. The peptides may also be used for CC distinguishing individuals who are seropositive from those who have not been exposed to HCMV (seromegative individuals). The present sequence is human cytomegalovirus lipidated vaccine peptide with covalent HTL and CTL enitones
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
New immunogenic peptides useful as a vaccination against cytomegalovirus infection, comprises epitopes of human cytomegalovirus which are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Immunogenic epitope; pp65; cytotoxic T cell; CTL; HCMV; vaccine; virucide; restenosis; coronary angioplasty; morbidity; mortality acquired immunodeficiency syndrome; viral retinitis; blindness; encephalitis; enteritis; mononucleosis; interstitial pneumonia;
                                                                                                                                              27-MAR-2000;
20-OCT-2000;
                                                                                                                                                                                          16-MAR-2001;
                                                                                                                                                                                                                        04-OCT-2001.
                                                   WPI; 2002-041233/05
                                                                                                                                                                                                                                                     WO200172782-A2
                                                                                                                                                                                                                                                                                                                  Peptide
                                                                                                                                                                                                                                                                                                                                                                Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                            Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human cytomegalovirus
                                                                                                                (CITY)
                                                                                                                                                                                                                                                                                                                                                                                             Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     malignancy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human cytomegalovirus pp65 protein based lipidated vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAU10851 standard; peptide; 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14-FEB-2002
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18;
                                                                                                                CITY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Karposi's sarcoma;
                                                                                                                                         2000US-00534639.
2000US-00692170.
                                                                                                                OF HOPE
                                                                                                                                                                                      2001WO-US008576.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ΑĀ,
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                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                        /label= HTL_epitope
/note= "Helper T lymphocyte epitope'
                                                                                                                                                                                                                                                                                                                                                                           /note=
                                                                                                                                                                                                                                                                                                   labe1=
                                                                                                                                                                                                                                                                                                                  29
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                                                                                                                                                                                                                                                                        = CTL_epitope
"Cytotoxic T lymphocyte epitope"
                                                                                                                                                                                                                                                                                                                                                                  "Covalently linked to 3 palmitic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 83; DB Pred. No. 4.2e-2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             post-bone marrow transplant complication
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4.2e-06;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mortality; AIDS;
                                                                                                                                                                                                                                                                                                                                                                     acid moieties"
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RESULT 13
AAU10850
ID AAU10
XX AAU10
XX AAU10
XX AAU10
XX Inmun
XX Encep
XX Encep
XX Encep
XX Human
OS Synth
XX Human
OS Synth
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Best Local
                                             (CITY ) CITY
                                                                                             27-MAR-2000;
20-OCT-2000;
                                                                                                                                                                  16-MAR-2001; 2001WO-US008576.
                                                                                                                                                                                                                             04-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Immunogenic epitope; pp65; cytotoxic T cell; CTL; HCMV; vaccine; virucide; restenosis; coronary angioplasty; morbidity; mortality; acquired immunodeficiency syndrome; viral retinitis; blindness; encephalitis; enteritis; mononucleosis; interstitial pneumonia;
                                                                                                                                                                                                                                                                             WO200172782-A2
                                                                                                                                                                                                                                                                                                                                                                                  Peptide
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human cytomegalovirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                malignancy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human cytomegalovirus pp65 protein based lipidated vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Modified-site
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   conditions including restenosis after coronary angioplasty, morbidity/mortality in AIDS (acquired immunodeficiency syndrome) patients, viral retinitis leading to blindness, encephalitis, enteritis, mononnucleosis, interstitial pneumonia, malignancy (e.g. Karposi's sarcoma) and post-bone marrow transplant complications. The present sequence is an HCMV pp65 based immunogenic epitope lipidated vaccine of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention relates to immunogenic peptides derived from human cytomegalovirus (HCMV) which are recognised by human cytotoxic T-lymphocytes (CTL). The invention also discloses a vaccine against HCMV comprising one of the peptides, and a pharmaceutically acceptable carrier, a cellular vaccine against HCMV comprising antigen presenting cells that have been treated in vitro so that they express the peptide, and a recombinant viral vector vaccine expressing a gene encoding the peptide. The vaccine is used to modulate the immune response to human cytomegalovirus infection. HCMV is implicated in a number of diseases and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAU10850 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 29 AA;
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                                                                                             2000US-00534639.
2000US-00692170.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Karposi's sarcoma; post-bone
                                                OF HOPE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                /label= CTL_epitope
/note= "Cytotoxic T lymphocyte epitope"
                                                                                                                                                                                                                                                                                                                                                                                             /label= HTL_epitope
/note=_"Helper T lymphocyte epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Covalently linked
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29
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Pred. No. 4.2e
2; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     marrow transplant complication
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          to 2 palmitic acid moieties"
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Diamond

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RESULT 14
AAU11422
ID AAU11
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AX
BY
COMMENT
AC AAU11
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COMMENT
AC AAU11
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Best Local :
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lymphocytes (CTL). The invention also discloses a vaccine against HCMV comprising one of the peptides, and a pharmaceutically acceptable carrier, a cellular vaccine against HCMV comprising antigen presenting cells that have been treated in vitro so that they express the peptide,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and a recombinant viral vector vaccine expressing a gene encoding the peptide. The vaccine is used to modulate the immune response to human cytomegalovirus infection. HCMV is implicated in a number of diseases and conditions including restenosis after coronary angioplasty, morbidity/mortality in AIDS (acquired immunodeficiency syndrome) patients, viral retinitis leading to blindness, encephalitis, enteritis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New immunogenic peptides useful as a vaccination against cytomegalovirus infection, comprises epitopes of human cytomegalovirus which are recognized by human cytotoxic T-lymphocytes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to immunogenic peptides derived from human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mononucleosis, interstitial pneumonia, malignancy (e.g. Karposi's sarcoma) and post-bone marrow transplant complications. The present sequence is an HCMV pp65 based immunogenic epitope lipidated vaccine
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 29 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gonadotrophin releasing hormone; GnRH; synthetic immunogen; luteinising hormone releasing hormone, LHRH; contraceptive; promiscuous helper T-cell peptide epitope; immunominic peptide epitope; breast cancer; uterine cancer; gynaecological cancer; endometriosis; uterine fibroid; benign prostatic hypertrophy; prostate cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAU11422 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Synthetic immunogen peptide 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mammalia.
Synthetic.
                                                                                                                                                                                                                  Modified-site
                                                                                                                                                                                                                                                                           Peptide
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                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                        /note= "Gonadotrophin releasing hormone epitope"
                                                                                                                                                                                                                                                                                                             /note=
                                                                                                                                                                                                                                                                                                                                                                      /note= "Tetanus toxoid sequence (830-844
                                                                                                                                                                                      note= "Amidated glycine or glycinamide"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          peptide;
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69.2%;
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                                                                                                                                                                                                                                                                                                             "Spacer peptide"
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. 4.2e-06;
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04-MAY-2001; 2001WO-US014363.

New immunoreactive peptide cytotoxic T-lymphocytes epitope of human cytomegalovirus PP150, useful for creating vaccines against cytomegalovirus infection.

2002-471432/50.

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RESULT 15
ABB79182
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention relates to a symmetric and invention relation to the problem of diseases useful inducing an immune response against GnRH in an animal subject, and as such is useful as a contraceptive and in the treatment of diseases such as cancer (of the breast, uterus and other gynaecological cancer), such as cancer (of the breast, uterus and other gynaecological cancer) endometricsis, uterine fibroids, benign prostatic hypertrophy and prostate cancer. The immunogen is effective in eliciting high and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Novel synthetic immunogen for inducing immune response against gonadotropin releasing hormone, comprises fusion peptide having promiscuous helper T-cell peptide epitope and immunomimic peptide
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 28 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human cytomegalovirus PP150; HCMV; human leukocyte antigen; HLA; CTL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human cytomegalovirus PP150 related vaccine peptide SEQ ID NO:8.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABB79182 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cytotoxic T lymphocyte; immunoreactive; immunogenic; virucide; immune response.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human cytomegalovirus.
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                                                                                                                                                                                Diamond
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Pred. No. 5.9e-06;
1; Mismatches 2;
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S Disclosure; Page 14; 28pp; English.

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The present invention describes a peptide (I) which is an immunogenic CC epitope recognised by CBB+ class I major histocomparibility complex (MRC) CC restricted cycotoxic T-lymphocytes (CT) of patients harbouring latent CC cytomegalovirus (HCMV) infection. Also described are: (1) a vaccine (II) against human CMV comprises antigen presenting cells which correctly which comprises (II); (2) a recombinant viral vector (IV) which comprises (II); (2) a recombinant viral vector (IV) which comprises (II); (3) a recombinant viral vector (IV) which comprises (II); (3) a recombinant viral vector (IV) which comprises (II); (2) a cellular cc concile (II); (3) a recombinant viral vector (IV) which comprises (II); (3) a recombinant viral vector (IV) which comprises (II); (2) a cellular viral vector (IV) which comprises (II); (2) a cellular viral vector (IV) which comprises (II); (3) a recombinant viral vector (IV) which comprises (II); (3) a recombinant viral vector (IV) which comprises (II); (2) a cellular viral vector (IV) which comprises (II); (3) a recombinant viral vector (IV) which comprises (II); (2) a cellular viral vector (IV) which comprises (II); (2) a cellular viral vector (IV) which comprises (II); (2) a cellular viral vector (IV) which comprises (II); (2) a cellular immunological reagent (IV); (2) a cellular immune against (III); (2) a cellular immune against vector vaccines against the (IV); and in immunological methods to detect pp150-cy sequence represents a HCMV pp150 related vaccine peptide, which is given vaccines against the present invention vector (IV) which comprises (II); (2) a cellular immune against (2) a cellular immune against
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A; Molecule type: protein
A; Residues: 461-475 < MATS
R; Demotz, S; Lanzavecchia, L.; Eisel, U.; Niemann, H.; Widmann, C.; Corradin, G.
U. Immunol. 142, 394-402, 1989
A; Title: Delineation of several DR-restricted tetanus toxin T cell epitopes.
A; Reference number: JS0098; MUID:89093918; PMID:2463305
A; Contents: annotation; epitope region
R; Schiavo, G.; Benfenati, F.; Poulain, B.; Rossetto, O.; de Laureto, P.P.; DasGupta, B.R.
Rature 359, B32-835, 1992
A; Title: Tetanus and botulinum-B neurotoxins block neurotransmitter release by proteolyti
A; Reference number: S27125; MUID:93063293; PMID:1331807
A; Contents: annotation

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### ALIGNMENTS

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R;de Filippis, V.; Vangelista, L.; Schiavo, G.; Tonello, F.; Montecucco, C. Eur. J. Biochem. 229, 61-69, 1995
A;Title: Structural studies on the zinc-endopeptidase light chain of tetanus A;Reference number: S69348; MUID:95262688; PMID:7744050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Rejwords: hydrolase; metalloproteinase; neurotoxin; transmembrane protein; zinc F;2-457/Product: tentoxylysin light chain (fragment A) #status predicted <TTL> F;461-1315/Product: tentoxylysin heavy chain (fragment B.C) #status experimental <TTH> F;461-864/Domain: channel forming (fragment B) #status predicted <TXB> F;865-1315/Domain: ganglioside binding (fragment C) #status predicted <TXC> F;233,237/Binding site: zinc (His) #status predicted F;234/Active site: Glu #status predicted
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C;Comment: The precursor is cleaved by endogenous proteinsee activity to form light (fractual chains are not toxic when separated). The amino end of the heavy chain (fragment B) c;Comment: Fragment B forms ion channels in a light dilayer. Fragment C binds to ganglid C;Comment: This potent neurotoxin binds to peripheral neuronal synapses, is internalized presynaptic neurons. It inhibits neurotransmitter release by proteolytic cleavage of sy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Accession:
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R;Aocession: B47175
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A; Residues: 2-31 < DEF >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Species: human immunodeficiency virus type 1, HIV-1
C;Date: 21-Jan-1994 #sequence_revision 18-Nov-1994 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Superfamily: tetanus toxin
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                                                                                                                                                                                                                            pol polyprotein - human immunodeficiency virus type 1 C;Species: human immunodeficiency virus type 1, HIV-1 C;Date: 15-Jul-1995 #sequence_revision 01-Sep-1995 #te
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: DNA
A; Residues: 1-559 <MOH>
A; Residues: extracted from NCBI backbone (NCBIP:122099)
A; Note: sequence extracted from NCBI backbone (NCBIP:122099)
C; Superfamily: pol polyprotein
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                                                                                                                                                    C;Accession: S54378
R;Theodore, T.; Buckler-White, submitted to the EMBL Data Lib
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A; Residues: 1-1002 <THE>
A; Cross-references: EMBL: M22639;
                                                                          A; Status: preliminary
                                                                                                    A; Reference number: S54377
A; Accession: S54378
                                                                                                                                                                                                                                                                                                              S54378
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                          ;Molecule type: genomic RNA;
Residues: 1-1002 <THE>
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45.2%;
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100.0%;
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; Pred. No.
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Pred. No. 6.1;
3; Mismatches
  NID: g329377; PIDN: AAA45366.1;
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                                                                                                                                                            July 1989
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0.067;
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          PID:g329381
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C; Superramıı
C; Keywords:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Keywords: AIDS; aspartic proteinase; endonuclease; hydrolase; F;57-155/Product: retropepsin #status predicted <RTP>F;81/Active site: Asp (shared with dimeric partner) #status expe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: DNA
A; Residues: 1-1003 <WAI>
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A;Title: Nucleotide sequence of the AIDS virus, LAV.
A;Reference number: A90866; MUID:85099333; PMID:2981635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Note: host Homo sapiens (man)
C;Date: 17-May-1985 #sequence_revision 17-May-1985 #text_change 03-Jun-2002
C;Accession: A03966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N; Contains: endonuclease (EC 3.1. --); recropepting (EC) Species: human immunodeficiency virus type 1, HIV-1
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                                                                                                                                                                                                                                                                                                                             R;Li, Y:; Hui, H.; Burgess, C.J.; Price, R.W.; Sharp, P.M.; J. Virol. 66, 6587-6600, 1992
A;Title: Complete nucleotide sequence, genome organization, A;Reference number: A44001; MUID:93021387; PMID:1404605
A;Accession: B44001.
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                                                                                                                                                                                                          A;Molecule type: DNA
A;Residues: 1-1003 <LIY>
A;Cross-references: GB:M93258
C;Comment: This protein is synthesized as a gag-pol polyprotein.
C;Comment: Specific enzymatic cleavages may yield mature protein
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Best Local S
Matches 14
                                                                 C;Superfamily: pol polyprotein C;Reywords: AIDS; aspartic proteinase; endonuclease; hydrolase; immunodeficiency; F;57-155/Product: retropepsin #status predicted <RTP>F;81/Active site: Asp (shared with dimeric partner) #status predicted
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Best Local Similarity
Matches 14; Conserv
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Pred. No. 11;
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Score 54; DB
Pred. No. 11;
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                           DB 1;
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HIV-1 retropepsin (EC 3.4.23.16) - human immunodeficiency virus type 1 (isolate N.Contains: endonuclease (EC 3.1.-.-); retropepsin (EC 3.4.23.16); RNA-directed C;Species: human immunodeficiency virus type 1, HIV-1 A,Note: host Homo sapiens (man)
C;Date: 17-May-1985 #sequence_revision 17-May-1985 #text_change 03-Jun-2002
C;Accession: A03965
C;Ratner, L.; Haseltine, W.; Patarca, R.; Livak, K.J.; Starcich, B.; Josephs, S. R;Ratner, J.; Papaas, T.S.; Ghrayeb, J.; Chang, N.T.; Gallo, R.C.; Wong-Staal, F.
                                                                                                                                                                                                                                                                                                                                                 A;Gene: pol
c;Superfamily: pol polyprotein
c;Keywords: ALDS; aspartic proteinase; endonuclease;
F;66-164/Product: retropepsin #status predicted APTP>
F;90/Active site: Asp (shared with dimeric partner) #
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A;Residues: 1-1012 <MUE>
C;Comment: Specific enzymatic cleavages
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C;Genetics:
A/Gene: pol
C;Superfamily: pol polyprotein
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A;Accession: T09440
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R;Pang, S.; Vinters, H.V.;
submitted to the EMBL Data
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Best Local
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93355; MUID:85111157; PMID:2982104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              D.H.; Cabradilla, C.D.; Benton, C.V.; Lasky, L.A.; Capon,
                                                                                                                                                                                                                                                                                                         37.5%;
45.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       37.5%;
45.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Akashi, T.; O'Brien, W.A.;
Library, July 1996
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                                                                                                                                                                                                                                                                                       Pred. No. 12;
}; Mismatches
                                                                                                                                                                                                                                                                                                         Score 54;
Pred. No.
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Pred.
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                                                                                                                                                                                                                                                                                                                       DB 1;
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                                                                                                                                                                                                                                                                                                                                                      #status experimental
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                                                                                                                                                                                                                                                                                                                                                                                          hydrolase;
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                                                                                                                                                                                                                                                                                                                                                                                       immunodeficiency;
Wong-Staal,
                                                                                                                                                                                                                                                                                                                                                                                                                                                        including protease,
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                     Dora
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T01668
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A; Molecule type: mRNA
A; Residues: 1-902 <ALI>
A; Cross-references: EMB:
C; Superfamily: pol poly
                                                                                                    Cell 46, 63-74, 1986
A;Title: Genetic variability of the AIDS virus: Nucleotide
A;Reference number: Z14389; MUID:86245056; PMID:2424612
                                                                                                                                                                              pol polyprotein - human immunodeficiency virus type 1 C; Species: human immunodeficiency virus type 1, HTV-1 C; Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #te: C; Accession: T01668 R; Alizon, M.; Wain-Hobson, S.; Gluckman, J.C.; Sonigo, Cell 46 C2-74 1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Gene: pol
C;Superfamily: pol polyprotein
C;Superfamily: pol polyprotein
C;Keywords: AIDS; aspartic proteinase; endonuclease; J
F;56-154/Product: retropepsin #status predicted <ATP>
F;80/Active site: Asp (shared with dimeric partner) #;
                                                                              A;Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Molecule type: DNA
A;Residues: 1-1002 <SpT>
A;Cross-references: GB:M27323; NID:g328154; PIDN:AAA44869.1; PID:g328158
C;Comment: Specific enzymatic cleavages may yield mature proteins includi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Title: Nucleotide sequence A;Reference number: JQ0065; NA;Accession: JQ0067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C;Date: 30-Sep-1991 #sequence_revision 30-Sep-1991 #text_change C;Accession: JQ0067 R;Spire, B.; Sire, J.; Zachar, V.; Rey, F.; Barre-Sinoussi, F.; Gene 81, 275-284, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Species: human immunodeficiency virus type 1, A;Note: host Homo sapiens (man)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Superfamily: pol polyprotein
C;Reywords: AIDS; aspartic proteinase; endonuclease; hydrolase; immunodeficiency;
F;69-167/Product: retropepsin #status predicted RPP>
F;93/Active site: Asp (shared with dimeric partner) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HIV-1 retropepsin (EC 3.4.23.16) - human immunodeficiency virus type N; Contains: endonuclease (EC 3.1.--); retropepsin (EC 3.4.23.16);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Cross-references: GB:M15654; C; Comment: Specific enzymatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Gene: pol
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A;Title: Complete nucleotide sequence of the AIDS virus, HTLV-III.
A;Reference number: A93353; MUID:85111123; PMID:2578615
A;Accession: A03965
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Best Local
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Best Local (
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             EMBL: K03456; NID: g60228;
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41.9%;
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45.2%;
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Pred. No. 12;
3; Mismatches
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1; Mismatches
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Pred. No. 16;
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           PIDN:CAA28012.1;
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        PID:g60230
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5); RNA-directed
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poly

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polyprotein

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reverse transcriptase, AZT-resistant variant - human immunodeficiency virus type C;Species: human immunodeficiency virus type 1, HIV-1 C;Date: 21-Sep-1993 #sequence_revision 18-Nov-1994 #text_change 13-Sep-1996 C;Accession: A47175 R;Mohri, H.; Singh, M.K.; Ching, W.T.; Ho, D.D. Proc. Natl. Acad. Sci. U.S.A. 90, 25-29, 1993 A;Title: Quantitation of zidovudine-resistant human immunodeficiency virus type 1 A,Reference number: A47175; MUID:93126353; PMID:7678340
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A47175
                                                                                                                                                                                                                                                                                                                                                                                    R;Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso, Chin, C.W.; Chung, M.K.; Conm., L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.; ansen, N.F.; Hughes, B.; Huizar, L.
Nature 408, 816-820, 2000
A;Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C. C., Li, J.H.; Li, Y.; Liu, S.X.; Liu, S.A.; Lucos, J.S.; Maiti, R.; Marziali, Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.
A;Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon, ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A;Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis.
A;Accession: P96595
A;Accession: P96595
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A; Residues: 1-559 < MOH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown protein, 25817-24837 [imported] - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001 C;Accession: F96595.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Status: preliminary; nucleic acid sequence not shown; not compared with conceptual tra
RESULT
G82074
                                                                                                                                                                                                                                                                                      A;Cross-references: GB:AE005173; NID:g10645423; PIDN:AAG21540.1; C;Genetics:
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A; Residues: 1-243 <S:
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A; Map position:
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                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KALTEVIQLTEEAELELAENREILREPVHGV 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KANSKFIGITERG---
                                                                                                                     ROYIKANSKFIGITERGRILKEPV 25
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                                                                                     -MGIDESGKIIKEPV
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                                                                                                                                                                                       34.7%;
50.0%;
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Pred. No. 20;
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Pred. No.
                                                                                                                                                                      ω
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                                                                                                                                                                                       Score 50; DB Pred. No. 9.9;
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17;
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                                                   RESULT 15
B84174
            hypothetical protein Vng0138h C;Species: Halobacterium sp. N
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R;Heidelberg, J.F.; Eisen, J.A.; Nelson, W.C.; Clayton, R.A.; Gwinn, M.L.; Dodson, R.J. chardson, D.; Ermolaeva, M.D.; Vamathevan, J.; Bass, S.; Qin, H.; Dragoi, I.; Sellers, I, R.R.; Mekalanos, J.J.; Venter, J.C.; Fraser, C.M. Nature 406, 477-483, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Proc. Natl. Acad. Sci. U.S.A. 98, 9889-9894, 2001
A;Title: The complete sequence of the 1,683-kb pSymB megaplasmid from the N2-fixing endos A;Reference number: A95842; MUID:21396508; PMID:11481431
A;Reference number: A95842; MUID:21396508; PMID:11481431
A;Reference number: A95842; MUID:21396508; PMID:11481431
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C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 18-Aug-2003
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C;Species: Vibrio cholerae
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A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-278 <ABI>
A;Cross-references: GB:AE004315; GB:AE003852; NID:g9657024; PIDN:AAF95592.1; GSPDB:GN0012
A;Experimental source: serogroup O1; strain N16961; biotype El Tor
C;Genetics:
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A;Cross-references GB:AL591985, PiDN:CAC48685.1; PiD:g15140157; GSPDB:GN00167
A;Experimental source: strain 1021, megaplasmid pSymB
R;Galibert, F; Finan, T.M.; Long, S.R.; Puhler, A.; Abola, P.; Ampe, F.; Barlc
pela, D.; Chain, P.; Cowie, A.; Davis, R.W.; Dreano, S.; Federspiel, N.A.; Fish
L; Hyman, R.W.; Jones, T.
Science 293, 668-672, 2001
A;Authors: Kahn, D.; Kahn, M.L.; Kalman, S.; Keating, D.H.; Kiss, E.; Komp, C.;
hebault, P.; Vandenbol, M.; Vorholter, F.J.; Weidner, S.; Wells, D.H.; Wong, K.
A;Title: The composite genome of the legume symbiont Sinorhizobium meliloti.
A;Reference number: A96039; MUID:21368234; PMID:11474104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A_iMap position: 1 C_iSuperfamily: nucleoside triphosphate pyrophosphohydrolase, MazG
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A;Molecule type: DNA
A;Residues: 1-323 <KUR>
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N.A.; Fisher, R.F.;
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h [imported] NRC-1

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Halobacterium

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C;Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 02-Feb-2001 C;Accession: B84174
R;Ndy, W.V.; Kennedy, S.P.; Mahairas, G.G.; Berquist, B.; Pan, M.; Shukla, H.D.; Lasky, S. Leithauser, B.; Keller, K.; Cruz, R.; Danson, M.J.; Hough, D.W.; Maddocks, D.G.; Jablc Jung, K.H.; Alam, M.; Freitas, T.
Proc. Matl. Acad. Sci. U.S.A. 97, 12176-12181, 2000
A;Authors: Hou, S.; Daniels, C.J.; Dennis, P.P.; Omer, A.D.; Ebhardt, H.; Lowe, T.M.; Li A;Reference number: A94160; MUID:20504483; P.P.; Omer, A.D.; Ebhardt, H.; Lowe, T.M.; Li A;Reference number: A94160; MUID:20504483; PMID:11016950
A;Clenetics: DNA A;Residues: 1-83 <STOO>
A;Cross-references: GB:AE004437; NID:g10579784; PIDN:AAG18758.1; GSPDB:GN00138
A;Genetics: UNG0138H
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Matches 9; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

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Matches 9; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

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Matches 9; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

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Matches 9; Conservative 5; Mismatches 4; Indels 0; Gaps 0;
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Title:
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

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## ALIGNMENTS

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THE REPORT OF THE PROPERTY OF 
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[6]
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Nat. Struct. Biol. 4:788-792(1997).

Nat. Struct. TETANUS TOXIN ACTS BY INHIBITING NEUROTRANSMITTER FUNCTION: TETANUS TOXIN ACTS BY INHIBITING NEUROTRANSMITTER RELEASE. IT BINDS TO PERIPHERAL NEURONAL SYNAPSES, IS INTERNALIZED AND MOVES BY RETROCRADE TRANSPORT UP THE AXON INTO THE SPINAL CORD WHERE IT CAN MOVE BETWEEN POSTSYNAPTIC AND PRESYNAPTIC NEURONS. IT INHIBITS NEUROTRANSMITTER RELEASE BY ACTING AS A ZINC ENDOPEDIDASE THAT CATALYZES THE HYDROLYSIS OF THE 76-GLN-|-PHE-77 BOND OF SYNAPTOBREVIN-2.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Schiavo G., Benfenati F., Poulain B., Rossetto O., de Laureto P.P., Dasgupta B.R., Montecucco C.; "Tetrans and botulinum-B neurotoxins block neurotransmitter release by proteolytic cleavage of synaptobrevin."; Nature 359:832-835(1992).
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MEDLINE=97475217; PubMed=9334741;
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MEDLINE=93063293; PubMed=1331807;
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MEDLINE=93010948; PubMed=1396558;
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modified and this statement is not removed. Usage by an
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Umland T.C., Wingert L.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                         EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          entities requires a license agreement (S or send an email to license@isb-sib.ch).
                               InterPro;
                                                                                                         MEROPS; M27.001;
                                                                              [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY: Belongs to peptidase family M27.
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COFACTOR: Binds 1 zinc ion per subunit (By similarity).

SUBUNIT: THE PRECURSOR POLYPEPTIDE IS SUBSEQUENTLY CLEAVED T
YIELD SUBCHAINS L AND H. THESE REMAIN LINKED BY A DISULFIDE
AND ARE NON-TOXIC AFTER SEPARATION.

MISCELLANBOUS: THE C-TERMINAL OF THE HEAVY CHAIN BINDS TO
                                                                                                                                                                                A25689;
1AF9; 29
1A8D; 14
1D0H; 27
1DFQ; 24
1DIW; 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATALYTIC ACTIVITY: Hydrolysis of 76-Gln-|-Phe-77 bond
                                                                                                                              1DLL;
1FV3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GANGLIOSIDE RECEPTORS
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                                                                                                                                                                                                                                                                                                                                      AF528097;
M12739; A
                                                                                                                                                                                                                                                                                                                                                                                     X04436; CAA28033.1; -.
X06214; CAA29564.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Biochem.
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                            ; IPR008985;
; IPR002160;
; IPR006025;
                                                                                                                              24-MAR-00.
05-SEP-01.
                                                                                                                                                                                                                                  39; BTCLIN.
29-APR-98.
14-OCT-98.
27-MAR-00.
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24-MAR-00.
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                                                                                                                                                                                                                                                                                                                                         AAA23282.1;
                                                                                                                                                                                                                                                                                                                                                              AA037454.1; -.
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                          ConA like lec_gl.
Kunitz_legume.
Pept_M_Zn_BS.
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and for commercia.
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3D-structure;
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Neurotoxin; Transmembrane; Hydrolase;
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TETANUS TOXIN HEAVY CHAIN.
ZINC (CATALYTIC) (BY SIMILARITY).
BY SIMILARITY.
ZINC (CATALYTIC) (BY CTUTTION OF THE CONTROL OF THE C
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INTERCHAIN
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Matches 14
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   PROSITE; PS00141, ASP PROTEASE; 1.
PROSITE; PS50175; ASP_PROT RETROV; 1.
AIDS; Polyprotein; Hydrolase; Aspartyl protease;
Nuclease; Transferase; RNA-directed DNA polymeras
                                                                                                      InterPro; IPR000477; RVTse.
Pfam; PF00552; inter-
                                                               Pfam;
Pfam;
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Pfam;
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InterPro; IPR001037; Integrase C.
InterPro; IPR003308; Integrase Zn.
InterPro; IPR009007; Pept A acīd.
InterPro; IPR001995; Peptīdase A2.
InterPro; IPR002156; RNaseH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Allzon M., Wain-Hobson S., Montagnier L., "Genetic variability of the AIDS virus: no of two isolates from African patients.":
Cell 46:63-74(1986)
                                                                                                                                                                                                                         EMBL; K03454;
HSSP; P03366;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P04589; Q77906;
13-AUG-1987 (Rel. 05, Created)
01-NOV-1988 (Rel. 09, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin)
Reverse transcriptase (EC 2.7.7.49); Ribonuclease
                                                                                                                                                                                                      MEROPS; A02.001;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
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                                                  n; PF00552; integrase; 1.
n; PF02022; Integrase_Zn; 1
n; PF00075; rnaseH; 1.
n; PF00065; rve; 1.
n; PF00077; rvp; 1.
n; PF00078; rvt; 1.
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                                                                                                                                                                                                                                                                                                              European
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CATALYTIC ACTIVITY: N deoxynucleoside triphosphate
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                                                                                                                                                                                                                                                                            non-profit institutions as and this statement is not removed.
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AAA44325.1;
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(EC 3.1.26.4)
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PDB; 1E28; 12
PDB; 1HXW; 04
PDB; 1PRO; 17
PDB; 1VIU; 13
PDB; 1VIK; 13
PDB; 1VIK; 13
  Pfam; PF00078;
PROSITE; PS0014
PROSITE; PS5017
                                Pfam;
Pfam;
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P12499;
01-OCT-1989
                                                              Pfam;
Pfam;
                                                                                                                                                                                                                                                                                       between the Swiss Institute of Bioinformathe European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2)2499;
01-OCT-1989 (Rel. 12, Createq,
01-OCT-1989 (Rel. 12, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin)
POL polyprotein [Contains: Protease (Retropepsin)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACT_SITE
SEQUENCE
                                                    Pfam;
                                                                                InterPro; IPR002156;
InterPro; IPR001584;
InterPro; IPR000477;
                                                                                                                                            InterPro; IPR001969; InterPro; IPR001037;
                                                                                                                                                                                                                                                                    or send an
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                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (NOV-1988)
                                                                                                    [nterPro;
                                                                                                               InterPro; IPR001995;
                                                                                                                       InterPro; IPR003308;
InterPro; IPR009007;
                                                                                                                                                                 MEROPS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=11683;
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Viruses; Retroid viruses; Retroviridae; Lentivirus.
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Ζ2
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                          n; PF00552; integrase; 1
n; PF02022; Integrase Zn
n; PF000072; rnaseH; 1.
n; PF00665; rve; 1.
n; PF00077; rvp; 1.
                                                                                                                                                                                                                                                                                                                                                                                   PTM:
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CATALYTIC ACTIVITY: Specific for a Pl residue that
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                                                                                                                                                                                                                                                                                                                                                                        determined
                                                                                                                                                                                                                                                                                                                                                                                                    phosphomonoester.
CATALYTIC ACTIVITY: N
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                                                                                                                                                                                    1VIK; 13-JAN-99
                                                                                                                                                                                             1VIJ; 13-JAN-99
                                                                                                                                                                                                         1PRO; 17-AUG-96
                                                                                                                                                                                                                  1HXW; 04-FEB-98
                                                                                                                                                                                                                                     S54378; S54378.
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00078; rvt; 1.
PS00141; ASP_PROTEASE; 1.
PS50175; ASP_PROT_RETROV; 1.
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(See http://www.isb-sib.ch/announce/
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Submitted
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[5]
STRUCTURE
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15-JUL-1999 (Rel. 38, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin) (EC
Reverse transcriptase (EC 2.7.7.49); Ribonuclease H (E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P04585; 009777; Q9WJC5; 13-AUG-1987 (Rel. 05, C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Viruses; Retroid viruses; NCBI_TaxID=11706;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human immunodeficiency virus type 1 (HXB2 isolate) (HIV-1). Viruses; Retroid viruses; Retroviridae; Lentivirus.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kervinen J., Lubkowski J., Zdanov A., Bhatt
Powell D.J., Kay J., Wlodawer A., Gustchina
"Toward a universal inhibitor of retroviral
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted
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                                                                                                                           X-RAY CRYSTALLOGRAPHY (2.6 ANGSTROMS) OF 156-595
MEDLINE=96097398; PubMed=8535785;
Ren.J., Esnouf R.M., Hopkins A.L., Ross C., Jones
                                                                                                                                                                                                                    Tam P.Y.S.;
"Three-dimensional solution structure of the HIV-1 protease with DMP323, a novel cyclic urea-type inhibitor, determined nuclear magnetic resonance spectroscopy.";
Protein Sci. 5:495-506(1996).
                                                                                                                                                                                                                                                                                                                           STRUCTURE BY NMR OF 57-155.

MEDLINE=97022126; PubMed=8868486;

Yamazaki T., Hinck A.P., Wang Y.-X.,

Wingfield P., Stahl S.J., Kaufman J.
                                                                  "The structure of HIV-1 reverse trans 9-chloro-TIBO: lessons for inhibitor
                                                                                                             Stuart D.I.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=99043699; PubMed=9827997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Complete nucleotide sequences of functional clones of the AIDS
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ase; Transferase; RNA-dir
  CRYSTALLOGRAPHY (2.55
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1002 AA;
                                             3:915-926(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (MAR-1999) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (JUN-1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alter H.J
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                                                                                                                                                                                                                                                                                                                                                                                                                                              7:2314-2323(1998).
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RNA-directed DNA polymerase;
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pitor design.";
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D., Chang C.-H.,
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    OF 156-595
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PDB PDB PDB PDB PDB PDB

1KEM; LBVE LRTJ BVG

1A30; 1ODY; 1BV7; 1BV9;

PDB

1RTH 1RTI

1RT3

12-JAN-00. 19-JUL-00. 19-JUL-00. 21-JUL-00. 06-SEP-00. 12-NOV-97. 20-MAR-00.

18WB; 1COT; 1COU; 1C1B; 1C1C; 1DMP; 1DTQ; 1DTT; 1EP4; 1EX4; 1EX4; 1EX4;

02-APR-00. 27-SEP-00. 26-JUL-00. 03-NOV-00. 28-FEB-01.

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MEDLINE=96208551; PubMed=8648598; Millcox B.B., Jones E.Y., Ross C., Hopkins A.L., Ren J., Esnouf R.M., Willcox B.B., Jones E.Y., Ross C., Miyasaka T., Walker R.T., Tanaka H., Stammers D.K., Stuart D.I.; "Complexes of HIV-1 reverse transcriptase with inhibitors of the HEPT series reveal conformational changes relevant to the design of potent non-nucleoside inhibitors.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ren J., Esnouf R.M., Hopkins A.L., Jones E.Y., Kirby I., Keeling J., Ross C.K., Larder B.A., Stuart D.I., Stammers D.K.; "3'-Arido-3'-deoxythymidine drug resistance mutations in HIV-1 reverse transcriptase can induce long range conformational changes."; Proc. Natl. Acad. Sci. U.S.A. 95:9518-9523(1998).

-i- CATALYTIC ACTIVITY: Specific for a P1 residue that is hydrophobic, and P1' variable, but often Pro.
                                                                                                                                                                                                                                                                                                                                                                                                                                   the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed. entitles requires a license agreement (See or send an email to license@isb-sib.ch).
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Ren J., Esnouf R.M., Hoj
Ross C.K., Larder B.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Stammers D.K., Stuart D.I.;
"Unique features in the structure of the complex between reverse transcriptase and the bis(heteroaryl)piperazine
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                                                                                                                                                                                                                                                                                                                                                                                         EMBL; K03455; AAB50259.1; Al EMBL; AF033819; AAC82598.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             between
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Esnouf R.M., Ren J., Hopkins A.L., Ross C.K., Jones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inhibitor.",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY:
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CATALYTIC ACTIVITY: N deoxynucleoside triphosphate = N diphosphate
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21-APR-97
21-APR-97
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16-FEB-99
03-APR-96
03-APR-96
03-APR-96
17-AUG-96
17-AUG-96
17-AUG-96
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28-FEB-01. 03-NOV-00.

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Pfam; PF00552; integrase, --
Pfam; PF02022; Integrase Zr
Pfam; PF02022; Integrase Zr
Pfam; PF02022; Integrase Zr
Pfam; PF00075; rve; 1.
R Pfam; PF00665; rve; 1.
R Pfam; PF00077; rvp; 1.
R Pfam; PF00077; rvp; 1.
R PROSITE; PS00141; ASP PRO;
JR PROSITE; PS00141; ASP PRO;
JR PROSITE; PS00141; ASP PRO;
JR PROSITE; PS0175; ASP PRO;
MAIDS; Polyprotein; Hydrol
KW Nuclease; Transferase; RN
FT CHAIN
TOTAIND 81 81
FT STRAND 56 71
FT TURN 72 73
FT TURN 72 73
FT TURN 82 83
FT STRAND 74 80
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FT STRAND 127 156
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FT STRAND 157 16
                 Query Match
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InterPro; IPR001037; Integrase C.
InterPro; IPR00103308; Integrase Zn.
InterPro; IPR0019007; Pept A acid.
InterPro; IPR001995; Peptidase A2.
InterPro; IPR001995; RaseH.
InterPro; IPR001584; Rve.
InterPro; IPR001584; Rve.
InterPro; IPR00177; RVTse.
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1JLA;
1JLB;
1JLC;
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                                                                                                                           PS00141; ASP_PROTEASE; 1.
PS50175; ASP_PROT_RETROV; 1.
Pyprotein; Hydrolase; Aspartyl protease; End; Transferase; RNA-directed DNA polymerase;
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30-OCT-02.
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03-OCT-01.
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15-MAY-95
23-MAR-99
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03-OCT-01.
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                                                                                                                                                                                      integrase; 1.
Integrase_Zn;
 37.5%;
  Score
                                                                                                                       PROTEASE
54;
DB
1,
Length 1003;
                                                                                                                             Endonuclease; se; 3D-structure.
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RESULT 5
POL HVIOY
ID POL HVIOY
AC P20892;
DT 01-FEB-1991
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                                                                                            Pfam; PF00552; integrase; 1.
Pfam; PF02022; Integrase_Zn; 1
Pfam; PF00075; rnaseH; 1.
Pfam; PF00665; rve; 1.
Pfam; PF00077; rvp; 1.
Pfam; PF00078; rvt; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 14; Conserv
Pfam; PF00078; rvt; 1.

PROSITE; PS00141, ASP_PROTEASE; 1.

PROSITE; PS00175; ASP_PROT_RETROV; 1.

PROSITE; PS00175; ASP_PROT_RETROV; 1.

AIDS; Polyprotein; Hydrolase; Aspartyl protease; Enc.

Nuclease; Transferase; RNA-directed DNA polymerase.

CHAIN

57 155 POTEASE.

CHAIN

S7 15 BY SIMILARITY.
                                                                                                                                                                                                                      MEROPS; A02.001; -.
InterPro; IPR001369; Aspprotease AS.
InterPro; IPR0013037; Integrase C.
InterPro; IPR003308; Integrase Zn.
InterPro; IPR003907; Pept A acid.
InterPro; IPR001995; Peptidase A2.
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InterPro; IPR000477;
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HIV; M26727;
                                                                                                                                                                                                                                                                                                                                    EMBL; M26727;
                                                                                                                                                                                                                                                                                                                                                                or send an
                                                                                                                                                                                                                                                                                                                                                                          modified and this statement is not removed entities requires a license agreement (See
                                                                                                                                                                                                                                                                                                                                                                                                                 the European Bioinformatics Institute.
                                                                                                                                                                                                              InterPro;
                                                                                                                                                                                                                                                                                                                                                                                           modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         individual presenting an atypical AIDS 3:707-715(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-FEB-1991 (Rel. 17, Created)
01-FEB-1991 (Rel. 17, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
POL polyprotein [Contains: Protease (Retropep
Reverse transcriptase (EC 2.7.7.49); Ribonucl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human immunodeficiency virus type 1 (OYI
Viruses; Retroid viruses; Retroviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=90148544; PubMed=2559749;
Huet T., Dazza M.C., Brun-Vezinet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=11699;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "A highly
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SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY A2; ALSO
KNOWN AS THE RETROPEPSIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATALYTIC ACTIVITY: Specific for a P1 residue and P1' variable, but often Pro. CATALYTIC ACTIVITY: Endonucleolytic cleavage
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MISCELLANEOUS: THE OYI ISOLATE WAS
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CATALYTIC ACTIVITY: N
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en the Swiss Institute of Bioinformatics and the EW
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                                                                                                                                                                                                                                                                                                                                                                                                   non-profit institutions as long
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Pept A_acid.
Peptidase A2.
                                                                                                                                                                                                Rve.
                                                                                                                                                                                 RVTse.
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Ribonuclease
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There are no restrictions on it
ag as its content is in no wa
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                                                          Endonuclease;
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H (EC 3.1.26.4)
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THE HEART AND SOLUTIONS OF THE HEART AND SOLUTIO
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Matches
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J. Virol. 66:6587-6600((1992)
-i- CATALYTIC ACTIVITY: Specific for a P1 residuand P1' variable, but often Pro-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Complete nucleotide sequence, genome organization, a properties of human immunodeficiency virus type 1 in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-UUN-1994 (Rel. 29, Created)
01-UUN-1994 (Rel. 29, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin) (EC 3.
Reverse transcriptase (EC 2.7.7.49); Ribonuclease H (EC
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Li Y., Hui H., Burgess C.J., Price R.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human immunodeficiency virus type 1 (YU-2 isolate) (HIV-1).
Viruses; Retroid viruses; Retroviridae; Lentivirus.
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01-JUN-1994
                                                                                                                                                               InterPro;
InterPro;
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InterPro;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                            InterPro; IPR000477; RVTso
Pfam; PF00552; integrase;
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InterPro; IPR000477;
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ween the Swiss Institute of Bioinformatics
European Bioinformatics Institute. There
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CATALYTIC ACTIVITY: N deoxynucleoside triphosphate =
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 determined.
SIMILARITY: THE PROTEASE
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                     PF02022;
PF00075;
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| IPR001037;
| IPR003308;
| IPR009007;
| IPR001995;
| IPR002156;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KALTEVIPLTEEAELELAENREILKEPVHGV 472
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AS THE RETROPEPSIN FAMILY.
                                                                                                                                                                                                                                                                  06-FEB-02.
13-MAY-98.
13-MAY-98.
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  rnaseH; 1. rve; 1.
                                        Integrase_Zn; 1.
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Integrase C.
Integrase Zn.
Pept A acid.
Peptidase A2.
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Best Local
                                                                                          InterPro; IPR001969; InterPro; IPR001037; InterPro; IPR003308; InterPro; IPR009007; InterPro; IPR009007; InterPro; IPR001995; InterPro; IPR001995; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-NOV-1988 (Rel. 09, Created)
01-NOV-1988 (Rel. 09, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin)
Reverse transcriptase (EC 2.7.7.49); Ribonuclease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACT S
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Pfam; PF00078; rvt; 1.
Pfam; PF00078; rvt; 1.
PROSITE; PS00141; ASP PROTEASE; 1.
PROSITE; PS50175; ASP_PROT_RETROV; 1.
PROSITE; PS50175; ASP_PROT_RETROV; 1.
NLC1ease; Polyprotein; Hydrolase; Aspartyl protease; Endonuclease;
Nuclease; Transferase; RNA-directed DNA polymerase; 3D-structure.
CHAIN
57
155
PROTEASE.
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIJINE-88219542; PubMed=3369091;
Gurgo C., Guo H.-G., Franchini G., Aldovini A., Collalti E., Farrell K., Wong-Staal F., Gallo R.C., Reitz M.S. Jr.;
"Envelope sequences of two new United States HIV-1 isolates.";
Virology 164:531-536(1988)
-i- CATALYTIC ACTIVITY: Specific for a P1 residue that is hydrophobic, and P1, variable, but often Pro.
                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produbetween the Swiss Institute of Bioinformatics the European Bioinformatics Institute. There a use by non-profit institutions as long as i modified and this statement is not removed. Us
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=11696;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human immunodeficiency virus type 1 (MV isolate) (F
Viruses; Retroid viruses; Retroviridae; Lentivirus.
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01-NOV-1988
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-!- CATALYTIC ACTIVITY: N deoxynucleoside triphosphate = N diphosphate
                                                                                                                                                                                                                                                                               EMBL; M17449; -; NOT_ANNOTATED_CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -!- MISCELLANEOUS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -!- PTM: Cleavage sites
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage
                                                                                                                                                                                                                                                                                                                                   or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                         entities requires a license agreement
                                                InterPro;
                                                                       InterPro;
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    PF00552;
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                          IPR002156;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1003 AA;
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Pred. No. 3
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                                                                                                                                                                                                                                                                                                                                                           moved. Usage by and for commercial (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB:
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MBL outstation -
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ACCOMENS AND REPORT OF THE PROPERTY OF THE PRO
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R Pfam; PF00077; rvp,
R Pfam; PF00078; rvt; 1.
R PROSITE; PS00141; ASP PROTEASE; 1.
DR PROSITE; PS50175; ASP PROT RETROV; 1.
DR PROSITE; PS50175; ASP PROT RETROV; 1.
DR PROSITE; PS50175; ASP PROTEASE; ASPA-directed DNA polymerase.
PROTEASE
BY SIMILARITY.

BY SIMILARITY.
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Best Local :
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P03366;
21-JUL-1986
            Brickson J., Neidhart D.C., Vandrie J., Kempf D.J., Wang X.C., Norbeck D.W., Plattner J.J., Rittenhouse J.W., Turon M., Wideb Kohlbrenner W.E., Simmer R., Helfrich R., Paul D.A., Knigge M. "Design, activity, and 2.8 A crystal structure of a C2 symmetr inhibitor complexed to HIV-1 protease.";
                                                                                                                                   MEDLINE=90341771;
                                                                                                                                                                                                      Lapatto R., Blundell T., Hemmings A., Overington J., Wil Wood S., Merson J.R., Whittle P.J., Danley D.E., Geogheg Hawrylik S.J., Lee S.E., Scheld K.G., Hobart P.M., "X-ray analysis of HIV-I proteinase at 2.7-A resolution structural homology among retroviral enzymes.";
                                                                                                                                                                                                                                                                                                                    MEDLINE=90044107;
                                                                                                                                                                                                                                                                                                                                                              Science 243:928-931(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MACHINE L., Haseltine W., Patarca R., Livak K.J., Starci Josephs S.F., Doran E.R., Rafalski J.A., Whitehorn E.A. Baumeister K., Ivanoff L., Petteway S.R. Jr., Pearson M Lautenberger J.A., Papas T.S., Ghrayeb J., Chang N.T., (Wong-Staal F.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Weber I.T., Miller
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=89146134;
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POL polyprotein [Contains: Protease (Retropep
Reverse transcriptase (EC 2.7.7.49); Ribonucl
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10-OCT-2003
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3D-STRUCTURE MODELING
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MEDLINE=85111123; PubMed=2578615;
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Pfam;
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313:277-284(1985).
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J. Mol. Bio.
-!- CATALYT
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           This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Ewthe European Bioinformatics Institute. There are no restr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hsiou Y., Ding J., Das K., Clark A.D. Jr., Hughes S.I "Structure of unliganded HIV-1 reverse transcriptase resolution: implications of conformational changes for the conformation of the conformation of conf
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MEDLINE=96434330; PubMed=8805568;
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Winkler I., Riess
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MEDLINE=95166801; PubMed=7532306;
Rodgers D.W., Gamblins S.J., Harris B.A., Ray
Hellmig B., Woolf D.J., Debouck C., Harrison
"The structure of unliganded reverse transcri
                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=99033049;
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Kohletaedt L.A., Wang J., Friedman J.M.
"Crystal structure at 3.5-A resolution
                                                                                                                                                                                                                                                                                                  inhibitor flexibility is a useful design
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Hughes S.H., Arnold E.;
"Crystal structure of human immunodeficiency
"Crystal structure with double-stranded
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Davies J.F. II, Ho
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                                                                                                                                                                          phosphomonoester.
CATALYTIC ACTIVITY:
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CATALYTIC ACTIVITY: Specific
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SIMILARITY:
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1MET;
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; IPR001969; ; IPR001037; ; IPR003308; ; IPR009007; ; IPR009007; ; IPR001995; ; IPR002156; ; IPR002156; ;
                                                                                                                                                                                                                        03-JUN-95.

10-JUL-95.

31-AUG-94.

31-JUL-94.

31-JUL-94.

31-JUL-94.
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01-AUG-96.
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26-JUN-02.
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26-JUL-00.
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26-JUN-02.
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   Integrase C.
Integrase Zn.
Pept A acid.
Peptidase A2.
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1FG6; 1FG8;

1FFI;

1FEJ; 1FFF; 1FF0;

1G2K; 1HPV;

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Matches 14
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InterPro; IPR000477; RVTse.
Pfam; PF00552; Integrase; 1.
Pfam; PF02022; Integrase_Zn;
Pfam; PF00075; rnaseH; 1.
Pfam; PF00665; rve; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            POL_HV1B5
P04587;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Complete nucleotide sequence of the AIDS virus, Nature 313:277-284(1985).

-I- CATALYTIC ACTIVITY: Specific for a P1 residue and P1' variable, but often Pro.

-I- CATALYTIC ACTIVITY: Endonucleolytic cleavage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-85111123; PubMed=2578615;
Ratner L., Haseltine W., Patarca R., Livak K.J., Starcich Josephs S.F., Doran E.R., Rafalski J.A., Whitehorn E.A., Baumeister K., Ivanoff L., Petteway S.R. Jr., Pearson M.L. Lautenberger J.A., Papas T.S., Ghrayeb J., Chang N.T., Gal Wong-Staal F.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13-AUG-1987 (Rel. 05, Created)
01-NOV-1988 (Rel. 09, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin)
Reverse transcriptase (EC 2.7.7.49); Ribonuclease
                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a chetween the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and formodified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human immunodeficiency virus type 1 (BH5 isolate) (HIV-1). Viruses; Retroid viruses; Retroviridae; Lentivirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=11682;
                                                                                                                                                                                                                                                                                                                                                                                                         entities requires a license agreement (S or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     determined.
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CATALYTIC ACTIVITY: N deoxynucleoside triphosphate = N
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H (EC 3.1.26.4)
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01-NOV-1988
10-OCT-2003
                                                                                                                                                                                                                                                                                                                                               POL_HV1BR
P03367;
REVISIONS TO 23-35.

MEDLINE=86245056; PubMed=2424612;
Alizon M., Wain-Hobson S., Montagnier L., Sonigo P.
"Genetic variability of the AIDS virus: nucleotide of two isolates from African patients.";
                                                                                                  MEDLINE=8509933; PubMed=2
MEDLINE=8509933; PubMed=2
Wain-Hobson S., Sonigo P.,
"Nucleotide sequence of th
Cell 40:9-17(1985).
                                                                                                                                                                                            Human immunodeficiency virus type 1 (BRU isolate)
Viruses; Retroid viruses; Retroviridae; Lentivirus
NCBI TaxID=11686;
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SEQUENCE
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Pfam;
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PROSITE; PS50175; ASP_PROT_RETROV; 1.
AIDS; Polyprotein; Hydrolase; Aspartyl p
Nuclease; Transferase; RNA-directed DNA
CHAIN.
69 167
PROTEASE.
CHAIN.
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Pfam;
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PF02022;
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PF00065;
PF00077;
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j; IPR001037; Integras
i IPR00308; Integras
i IPR009007; Pept A a
i IPR001995; Peptidas
i IPR002156; RNaseH.
i IPR00184; Rve.
i IPR00187; RVTse.
i IPR00187; integrase; 1.
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1015 AA;
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16-DEC-98.
23-FEB-99.
23-FEB-99.
23-FEB-99.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10-JUL-02.
01-APR-97.
07-DEC-96.
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23-FEB-99.
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14-FEB-95.
10-JUL-02.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
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                                                                                                                                                                                                                                  1. 01, Creace.,
21. 09, Last sequence update,
21. 42, Last annotation update)
n [Contains: Protease (Retropepsin) (
rriotase (EC 2.7.7.49); Ribonuclease F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rve;
                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rnaseH; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Integrase
                                                                                                                                                                                                              viruses; Retroviridae; Lentivirus.
                                                                                                                                                 PubMed=2981635;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93 BY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            45.2%;
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                                                                                                               P., Danos
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                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -RILKEPVHGV
                                                                                                                 s O., Col
s virus,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
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No.
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                                                                                                                                Cole
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                                                                                                                   le S.,
LAV.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         polymerase; 3D-structure
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                                                                                                                                                                                                                                                            H (EC
                                                                                                                                                                                                                             (HIV-1).
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               sequence analysis
                                                                                                                                                                                                                                                            EC 3.4.23.16);
(EC 3.1.26.4)].
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Pfam; PF00552; integrase; 1.
Pfam; PF00552; Integrase; 1.
Pfam; PF00072; Integrase_Zn; 1.
Pfam; PF00075; rve; 1.
Pfam; PF00076; rve; 1.
Pfam; PF00077; rvp; 1.
Pfam; PF00078; rvt; 1.
P
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PDB; 1D;
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PDB; 1D;
PDB; 1H;
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                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
InterPro;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      use by non-profit institutions as long modified and this statement is not removed. entitles requires a license agreement (See or send an email to license@isb-sib.ch).
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-i- CATALYTIC ACTIVITY: Specific for a Fand Pi' variable, but often Pro.
-i- CATALYTIC ACTIVITY: Endonucleolytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=92190341;
Spinelli S., Liu C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      X-RAY CRYSTALLOGRAPHY (2.7 ANGSTR MEDLINE=92190341; PubMed=1799632;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the European Bioinformatics Institute.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  interPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             determined.
SIMILARITY:
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CATALYTIC ACTIVITY: N deoxymucleoside triphosphate
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1D4S;
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1DAZ;
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                                                                                                                                                                                                                                                                                                                                                                                                                              o; IPR001969; Aspprotease AS.
o; IPR001037; Integrase C.
o; IPR003006; Integrase Zn.
o; IPR009007; Pept A acid.
o; IPR001995; Peptidase A2.
o; IPR001595; RvaseH.
o; IPR0015954; Rve.
o; IPR000477; RVTse.
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15-UTL 98.
16-FEB 99.
12-OCT 99.
13-OCT 99.
13-OCT 99.
03-MAY 96.
08-MAR 96.
08-MAR 96.
08-MAR 96.
08-MAR 96.
08-MAR 96.
03-APR 97.
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RETROPEPSIN
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ASP_PROT_RETROV;
; Hydrolase; Aspan
                                                                                                                                              e; RNA-directed DNA polymerase; 3
7 PROTEASE.
3 BY SIMTIATE
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Best Local S
Matches 14
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21-JUL-1986
01-NOV-1988
10-OCT-2003
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STRAND
HELIX
                                                                                                                                                                                                                                                                                                                   Muesing M.A.;
Submitted (XXX-1987) to the HIV data bank.
Submitted (XXX-1987) to the HIV data bank.
-i- CATALYTIC ACTIVITY: Specific for a P1 residue the and P1' variable, but often Pro.
-i- CATALYTIC ACTIVITY: Endonucleolytic cleavage to
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                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a c between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and foentities requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                        Nature
[2]
                                                                                                                                                                                                                                                                                                                                                                                                                                  Muesing M.A., Capon D.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                          PDB;
                                                                PIR;
PDB;
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PDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. MEDLINE=85111157;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-NOV-1988 (Rel. 09, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin) (EC
Reverse transcriptase (EC 2.7.7.49); Ribonuclease H (F
                                                                                                                      EMBL;
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                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                               REVISION
                                                                                                                                                                                                                                                                                                                                                                                                           AIDS/lymphadenopathy retrovirus.";
                                                                                                                                                                                                                                                                                                                                                                                                                        "Nucleic acid structure and expression of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=11700;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human immunodeficiency virus type 1 (PV22 isolate) (HIV-1).
Viruses; Retroid viruses; Retroviridae; Lentivirus.
                                                                                                                                                                                                                                   determined.
SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY A2; ALSO KNOWN AS THE RETROPEPSIN FAMILY.
                                                                                                                                                                                                                                                                                               phosphomonoester.
CATALYTIC ACTIVITY: N deoxymucleoside triphosphate = N diphosphate
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1G35;
                       1KJH
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1HTG;
1HVI;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KANSKFIGITERG----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KALTEVIPLTEEAELELAENREILKEPVHGV 484
                                                                         17-JUN-98.
20-AUG-97.
17-SEP-97.
                                 30-APR-94.
                                          31-JUL-94.
                                                     08-NOV-96
                                                                 06-JUN-01.
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137
152
155
                     06-MAR-02
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                             GNVWVL.
                                                                                                                                                                                                                                                                                                                                                                                                                                              Smith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA;
                                                                                                                    NOT_ANNOTATED_CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                        PubMed=2982104;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         136
146
153
161
162
                                                                                                                                                                                                                                                                                                                                                                                                                                              D.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             37.5%;
45.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               115031 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Cabradilla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ---RILKEPVHGV 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               164702F074A84394 CRC64;
                                                                                                                                                                                                                                                                                                                                            for a P1 residue that is hydrophobic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              No.
                                                                                                                                                                                                                                                                           the mature proteins
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                                                                                                                                                                                                                                                                                                                                                                                                                                              C.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1;
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                                                                                                                                                                                                                                                                                                                                                                                                                         the human
                                                                                                                                                                                                                                                                                                                                                                                                                                              Benton C.V.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1015;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EC 3.4.23.16);
(EC 3.1.26.4)].
                                                                                                                                                                                                restrictions
                                                                                                                                                                                                                                                                            remain to
                                                                                                                                                                                                                                                                                                                                                                                                                                              Lasky L.A.,
                                                                                                                                                                                                              a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                             for commercial
                                                                                                                                                                  .ch/announce/
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                                                                                                                                                                                                   임
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Best Local S
Matches 14
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P18802;
01-NOV-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pfam; PP00552; integrase; 1.
Pfam; PP02022; Integrase_Zn;
Pfam; PP00055; rraseH; 1.
Pfam; PP00665; rve; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-NOV-1990 (Rel. 16, Created)
01-NOV-1990 (Rel. 16, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin)
Reverse transcriptase (EC 2.7.7.49); Ribonuclease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
ACT S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE; PS00141; ASP PROTEASE; 1.

PROSITE; PS50175; ASP_PROT_RETROV; 1.

AIDS; Polyprotein; Hydrolase; Aspartyl protease; Encantrolase; Transferase; RNA-directed DNA polymerase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00077; rvp; Pfam; PF00078; rvt;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEROPS; A02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HIV; K02083; POL$PV22.
                                                                                                                                                                                                  -!- MISCELLANEOUS: NDK, ISOLATED FROM A ZAIRIAN PATIENT AFFECTED WITH AIDS, AND IS A HIGHLY CYTOPATHOGENIC STRAIN.
-!- SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY A2; ALSO
                                                                                                                                                                                                                                                                                                                                                                                           -!- CATALYTIC ACTIVITY: Specific for a R and P1' variable, but often Pro. -!- CATALYTIC ACTIVITY: Endonucleolytic
                                                                                                                                                                                                                                                                                                   -!- PTM: Cleavage sites that
                                                                                                                                                                                                                                                                                                                                               phosphomonoester.
-!- CATALYTIC ACTIVITY: N deoxynucleoside triphosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       human immunodeficiency virus.";
Gene 81:275-284(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Spire B., Sire J., Zachar V., Rey Hampe A., Chermann J.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Viruses; Retroid viruses; Retroviridae; Lentivirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro;
                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=11695;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human immunodeficiency virus type 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Nucleotide sequence of HIV1-NDK: a highly cytopathic strain of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=90034200; PubMed=2806917;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SITE
                                                                                                                                                                           KNOWN AS THE RETROPEPSIN FAMILY.
                                                                                                                                                                                                                                                                            determined
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              454 KALTEVIPLTEEAELELAENREILKEPVHGV 484
                                                                                                                                                                                                                                                                                                                           {DNA} (N)
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; IPR001037; Integrase_C.
; IPR003108; Integrase_Zn.
; IPR003907; Pept A_acid.
; IPR001995; Peptidase_A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KANSKFIGITERG-----RILKEPVHGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPR001584; Rve.
IPR000477; RVTse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IPR002156; RNaseH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         93 S
1015 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
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115090 MW; 51529D18E?
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
••
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                                                                                                                                                                                                                                                                                                                                                                                                                                                for a P1 residue that is hydrophobic,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Е.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (NDK isolate) (HIV-1)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Barre-Sinoussi F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3.4;
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                                                                                                                                                                                                                                                                                                                                                                                                  cleavage to
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Endonuclease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (EC 3.4.23.16);
H (EC 3.1.26.4)].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
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                                                                                                                                                                                                                                                                                                                                                    = N diphosphate
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RESULT
POL_HV1
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Best Local
                                                                                                                                                                                                                                                                                                                                                                   ULT 13
_HV1N5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR001969; Aspprot
InterPro; IPR001037; Integra
InterPro; IPR003008; Integra
InterPro; IPR003907; Pept A
InterPro; IPR001995; Peptida:
InterPro; IPR001995; RNaseH.
InterPro; IPR001584; RVe.
InterPro; IPR00157; RVIse.
Pfam: PP00552; integrase; 1.
                                                                                                                                                                                                                                                                                                                                             POL_HV11
P12497;
                                                                               resolution.";
J. Biol. Chem. 265:14209-14219(1990)
                                                                                                                                         MEDLINE=90354401; PubMed=2201682; Fitzgerald P.M.D., McKeever B.M., Springer J.P., Helmbach J.C., Leu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHAIN
ACT_SITE
SEQUENCE
                                                                                                                                                                                                                                                                                   10-OCT-2003 (Rel. 42, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin)
Reverse transcriptase (EC 2.7.7.49); Ribonuclease
                                    -
                                                          -
                                                                                                          "Crystallographic analysis of a complex between human immunodeficiency virus type 1 protease and acetyl-pepstatin
                                                                                                                                                                          X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS)
                                                                                                                                                                                                    Submitted
                                                                                                                                                                                                          SEQUENCE FROM N.A. (CLONE PY Buckler C.E., Buckler-White
                                                                                                                                                                                                                                                     Human immunodeficiency virus type Viruses; Retrovir
                                                                                                                                                                                                                                                                                                                        01-OCT-1989
                                                                                                                                                                                                                                                                                                                                    01-OCT-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00077; rvp; 1.
Pfam; PF00078; rvt; 1.
PfAm; PF00078; rvt; 1.
PROSITE; PS00141; ASP PROT RETROV; 1.
PROSITE; PS50175; ASP PROT RETROV; 1.
AIDS; Polyprotein; Hydrolase; Aspartyl p
Nuclease; Transferase; RNA-directed DNA
Nuclease; Transferase; RNA-directed DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam;
Pfam;
                                                                                                                                                                                                                                            NCBI_TaxID=11698;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HSSP; P03366; 1HMV.
HIV; M27323; POL$NDK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEROPS; A02.001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IR; JQ0067;
                                                    CATALYTIC ACTIVITY: Specific for a F and Pl' variable, but often Pro. CATALYTIC ACTIVITY: Endonucleolytic
               PTM:
                            phosphomonoester.

CATALYTIC ACTIVITY: N deoxynucleoside triphosphate = N diphosphate
                                                                                                                                                                                                                                                                                                                                                       HV1N5
                                                                                                                                                                                                                                                                                                                                                                                                               441
{DNA}(N).
M: Cleavage sites that yield the mature proteins
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                        (JUN-1988) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  56
80
1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                (Rel. 12, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAA44869.1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Integrase_Zn; 1.
                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rnaseH;
                                                                                                                                                                                               (CLONE PNL4-3).
ler-White A.J., Willey R.L.,
3) to the EMBL/GenBank/DDBJ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Aspprotease AS.
Integrase C.
Integrase Zn.
Pept A_acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                               36.8%;
41.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Peptidase_A2
                                                                                                                                                                                                                                                                                                                    Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 113621 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RNaseH.
                                                                                                                                                                                                                                                    Retroviridae; Lentivirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 53;
Pred. No.
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                                                                         for a P1 residue that is hydrophobic,
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                                                                                                                                                    van Middlesworth J.F.
                                                                                                                                         .-T.,
                                                                                                                                                                                                                                                              (New York-5 isolate) (HIV-1).
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                                                                                                                                                                                                , McCoy J.;
databases.
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                                                                                                                                           Dixon
           remain to
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                                                                                                                                         R.A.F.,
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R LILL.

JR InterPro; IPR000477; KV15...

DR InterPro; IPR000477; KV15...

DR Pfam; PF00052; integrase, 1.

DR Pfam; PF00075; rnaseH; 1.

DR Pfam; PF00075; rve; 1.

DR Pfam; PF00076; rvt; 1.

DR Pfam; PF00078; rvt; 1.

DR Pfam; PF00078; rvt; 1.

DR PROSITE; PS00141; ASP PROTREASE; 1.

PROSITE; PS50175; ASP PROTREASE; 1.

PROSITE; PS50175; ASP PROTREASE; NA-directed DNA polymerase; Endonuclease;

ATDS; Polyprotein; Hydrolase; Aspartyl protease; Endonuclease;

PROTEASE.

PROTEASE.
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InterPro;
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PDB;
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PDB;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          entities requires a license agreement (S or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
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                                              Local
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                                    l Similarity
13; Conser
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; IPR001037; Integrase C.
); IPR003308; Integrase Zn.
); IPR003308; Integrase Zn.
); IPR009007; Pept A_acid.
); IPR001995; Peptidase A2.
KALTEVVPLTEEAELELAENREILKEPVHGV 472
                  KANSKFIGITERG----
                                                                                                                                                                                                                                                                                                                                           IPR002156; RNaseH.
IPR001584; Rve.
IPR000477; RVTse.
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18-NOV-98.
16-SEP-98.
16-SEP-98.
13-MAY-98.
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12-MAR-97.
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19-JUL-99.
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134
                                            41.9%;
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                                                                        113535 MW;
                 ----RILKEPVHGV
                                  Score 53; DB
Pred. No. 4.8;
4; Mismatches
                                                                      EB9CDBA30E114A55 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TO PEPTIDASE FAMILY A2; ALSO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (See http://www.isb-sib.ch/announce/
                                            DB 1;
                 28
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                                                    Length 1003;
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POL HVIMA STANDARD; PRT; 1002 AA.

P04588; Q79582;
13-AUG-1987 (Rel. 05, Created)
01-NOV-1988 (Rel. 09, Last sequence update)
10-CCT-2003 (Rel. 42, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin)
Reverse transcriptase (EC 2.7.7.49); Ribonuclease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=86245056; PubMed=2424612;
Alizon M., Wain-Hobson S., Montagnier L., Sonigo P.;
"Genetic variability of the AIDS virus: nucleotide sof two isolates from African patients.";
Cell 46:63-74(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               use by non-profit institute. There are no restrictions on its modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR009007; PINEEPRO; IPR001995; PINEEPRO; IPR001195; PINEEPRO; IPR001156; RICERPro; IPR0001584; RICERPRO; IPR000477; R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL;
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                                                                                                                                                                                 CHAIN
ACT_SITE
SEQUENCE
                                                                                                                                                                                                                       PROSITE; PS00141; ASP PROTEASE; 1.

PROSITE; PS00175; ASP PROT RETROV; 1.

AIDS; Polyprotein; Hydrolase; Aspartyl protease; End Nuclease; Transferase; RNA-directed DNA polymerase; CHAIN

56 154 PROTEASE.
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Pfam;
Pfam;
Pfam;
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Viruses; Retroid viruses; Retroviridae; Lentivirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEROPS; A02.001;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       determined.
SIMILARITY: THE PROTEASE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 phosphomonoester.
CATALYTIC ACTIVITY: N deoxynucleoside triphosphate
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIMILARITY: THE PROTEASE BELONGS KNOWN AS THE RETROPEPSIN FAMILY.
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: A07116; CAA0061
1HHJ; 31-OCT-93.
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                                                                                                                                                                                                                                                                                                                                           PF00665;
PF00077;
PF00078;
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PF02022;
PF00075;
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                                                                                         10;
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  LAENREILKEPVHGV
                                               ITERGRILKEPVHGV 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IPR001969; Aspprotease AS IPR001037; Integrase_C. IPR003308; Integrase_Zn. IPR003307; Pept_A_acid.
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                                                                                                                                                                                   1002 AA;
                                                                                         Conservative
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rnaseH; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pept A acid.
Peptidase A2.
RNaseH.
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RVTse.
                                                                                                               36.1%;
66.7%;
                                                                                                                                                                                   113537 MW;
                                                                                         Pred. No. 6.8
1; Mismatches
                                                                                                                                      Score 52;
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                                                                                                                                      Length 1002;
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H (EC 3.1.26.4)].
                                                                                                                                                                                                                                                                             Endonuclease;
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RESULT 15
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Matches 10
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InterPro;
InterPro;
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Submitted (XXX-1987) to the HIV data bank.
Submitted (XXX-1987) to the HIV data bank.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-NOV-1988 (Rel. 09, Created)
01-NOV-1988 (Rel. 09, Last sequence update)
28-FBB-2003 (Rel. 41, Last annotation update)
FOL polyprotein [Contains: Protease (Retropepsin)
Reverse transcriptase (EC 2.7.7.49); Ribonuclease
                                                                                                                                                   CHAIN
ACT_SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; M17451; AAA45053.1;
HSSP; P04585; 1RTH.
HIV; M17451; POLSRF.
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                                                                                                                                                                                                                                                                                                                                       pfam; pF00552; integrase; 1.
pfam; pF02022; Integrase Zn;
pfam; pF00075; rnaseH; 1.
pfam; pF00665; rve; 1.
pfam; pF00077; rvp; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro;
InterPro;
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Wolf H., Parks E.S., Park
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
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                                                                                                                                                                                                                      PROSITE; PS00141; ASP_PROTEASE; 1.
PROSITE; PS50175; ASP_PROT_RETROV; 1.
PROSITE; PS50175; Hydrolase; Aspartyl protease;
AIDS; Polyprotein; Hydrolase; Aspartyl protease;
Nuclease; Transferase; RNA-directed DNA polymeras
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InterPro; IPR000477; RVTse.
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CATALYTIC ACTIVITY: Endonucleolytic cleavage to
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CATALYTIC ACTIVITY: N deoxynucleoside triphosphate =
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       14 ITERGRILKEPVHGV
                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; IPR001969; Aspprotease_AS.; IPR001037; Integrase_C.; IPR003108; Integrase_Zn.; IPR009007; Pept_A_acid.; IPR001995; Peptidase_A2.; IPR002156; RNaseH.
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1002 AA;
                                                      Conservative
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                                                                             36.1%;
66.7%;
                                                                                                                                                     113755 MW;
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                                                         Pred. No. 6.8
L; Mismatches
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                                                                                                                                                                              SIMILARITY
                                                                                                                                                        864341718E5C48C2 CRC64;
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6.8;
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                                                                                                        Length 1002;
                                                                                                                                                                                                                                                    Endonuclease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (EC 3.4.23.16);
H (EC 3.1.26.4)].
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                                                           Gaps
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457 LAENREILKEPVHGV

Search completed: July 20, 2004, 06:31:01 Job time: 6.5082 secs

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Minimum DB seq length: 0
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Perfect score:
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     BLOSUM62
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144
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     July 20,
                                                                                                                                                                                                              SPTREMBL_25:*
                                                                                                                                                                                                                                      Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                              GRQYIKANSKFIGITERGRILKEPVHGV 28
                                                          sp_organelle:*
sp_phage:*
sp_plant:*
sp_rodent:*
sp_virus:*
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                                                                                                                                                                          sp_archea:*
sp_bacteria:*
sp_fungi:*
sp_vertebrate:*
sp_unclassified:*
sp_rvirus:*
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sp_mammal:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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Q8Q784 Q8JDC4 Q8AHG3	QBADE1 P90232	Q8Q761 Q8AFL1 Q9IDB5	Q7SKY9 Q7SKZ2 Q8Q736	Q93N27 Q9WF98 Q79792 P89972	SUMMARIES
Q8q784 human immun Q8jdc4 human immun Q8ahg3 human immun	Q/1151 numan 1mmun Q8adel human 1mmun P90232 human 1mmun	human human human	human human human	Q93n27 clostridium Q9wf98 human immun Q79792 human immun P89972 human immun	Description

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
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Q91M75	Q7SKW0	Q9WGS3	Q9WGV4	Q9WGW4	Q9WGW3	Q9WGV6	Q9WGW6	Q9WGX5	Q9WGW2	Q9WGX7	Q9WGX6	Q9W8H5	Q9WGV5	Q9WGW5	Q9WGV7	Q9WGV3	Q9WF84	Q8AFE1	Q8AU65	Q8Q876	Q9J4V1	Q9J4V2	Q9J4V3	Q90D76	Q7ZP95	Q7ZPA1	Q8AGZ4	Q8AH44
															Q9wgv7 ]			1		Q8g876 ]		Q9j4v2 l			01	_		Q8ah44 l
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## ALIGNMENTS

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93N27

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                                                                                                                                                                                                                                                                         EP SEQUENCE FROM N.A.

(P) SEQUENCE FROM N.A.

(C) Shumin Z., Dianliang L.;

(C) Coloning and sequence analysis of tetanus toxin gene.";

(C) Coloning and sequence analysis of tetanus toxin gene.";

(C) Coloning and sequence analysis of tetanus toxin gene.";

(C) Coloning and sequence analysis of tetanus toxin gene.";

(C) Coloning and sequence analysis of tetanus toxin gene.";

(C) Coloning and sequence analysis inhibitor activity; IEA.

(C) Coloning and sequence activity; IEA.

(C) Coloning activity; IEA.

(C) Coloning and sequence activity; IEA.

(C) Coloning and sequence activity; IEA.

(C) Coloning and sequence activity; IEA.

(C) Coloning activity; IE
          Query Match
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01-DEC-2001 (TrEMBLrel. 19, C
01-DEC-2001 (TrEMBLrel. 19, I
01-OCT-2003 (TrEMBLrel. 25, I
Tetanus toxin (Fragment).
Clostridium tetani.
                                                                                                          NON TER
NON TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=1513;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q93N27
                                                                                                                                                                                                                                                              PROSITE;
                                                                                                                                                                                                                                                    PS00142; ZINC_PROTEASE; 1.
                                                                                                          1310 13
1310 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                         1310
     48.6%;
                                                                                                          150316 MW;
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Last annotation update)
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Score 70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                          9EADDC914418E450 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1310
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DB

2;

Length 1310;

Matches Best

14; Similarity

larity 100.0%; Conservative 0;

Pred. No. Mismatches

0.15;

0,

Indels

0

Gaps

0

Local

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RESULT
Q9WF98
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                                                                                                                        InterPro;
InterPro;
InterPro;
                                                                                                                                                                 GO; GO:0019012; C:virion; IEA.
GO; GO:0004190; F:aspartic-type endopeptidase activity; IEA.
GO; GO:0004517; F:DNA binding; IEA.
GO; GO:0004519; F:endonuclease activity; IEA.
GO; GO:0004513; F:peptidase activity; IEA.
GO; GO:0004523; F:ribonuclease H activity; IEA.
GO; GO:0004523; F:ribonuclease H activity; IEA.
GO; GO:000542; F:RNA-directed DNA polymerase activity; IEA.
GO; GO:0005198; F:structural molecule activity; IEA.
GO; GO:0005198; F:structural molecule activity; IEA.
GO; GO:0005198; F:stransferase activity; IEA.
GO; GO:0005198; F:zinc ion binding; IEA.
GO; GO:0005108; P:DNA recombination; IEA.
GO; GO:0005109; P:DNA integration; IEA.
GO; GO:0005109; P:DNA protective in the combination; IEA.
GO; GO:0005109; P:DNA protective in the combination; IEA.
GO; GO:0005109; P:DNA protective in the combination; IEA.
GO; GO:0005278; P:DNA accombination; IEA.
GO; GO:0005278; P:RNA dependent DNA replication; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Novitsky V.A., Montano M.A., McLane M.F., Renjifo B., Vannberg F., Foley B.T., Ndung'u T.P., Marlink R., Essex M.; Foley B.T., Ndung'u T.P., Marlink R., Essex M.; Submitted (DEC-1998) to the EMBL/GenBank/DDBJ databases.

-!- pTM: SPECIFIC ENZYMATIC CLEAVAGES IN VIVO YIELD MATURE PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Molecular cloning and phylogenetic analysis of human immunodeficiency virus type 1 subtype C: a set of 23 full-length clones from Botswana.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=99214383; PubMed=10196340;
Noviteky V.A., Montano M.A., McLane M.F.,
Foley B.T., Ndung'u T.P., Rahman M., Makhu
Essex M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9WF98;
01-NOV-1999 (TrEMBLrel. 12, Created)
01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
                                                                                            InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=C-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ысы swana.
J. Virol.
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                                                                                                                                                                                                                                                                                                                                                                                                                          PIR;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=11676;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Viruses; Retroid viruses; Retroviridae; Lentivirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human immunodeficiency virus 1.
                                                                  InterPro;
                                                                                   InterPro;
                          InterPro;
                                         InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N
                                                                                                                                                                                                                                                                                                                                                                                                                                      (BY SIMILARITY).

SOMMLARITY: THE PROTEASE BELONGS KNOWN AS THE RETROPEPSIN FAMILY.

L; AF110977; AAD17153.1; -.
                                                                                                                                                                     GO:0016032;
                                                                                                                                                                                                                                                                                                                                                                                                                         S49086; S49086.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                831
                                                                                                                                                                                                                                                                                                                                                                                                          P03366; 1HNV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           w
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QYIKANSKFIGITE
                                       IPR001969;
IPR0010721;
IPR001037;
IPR001308;
IPR001995;
IPR009007;
IPR000907;
IPR0009016;
IPR008916;
IPR008919;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 96BW16D14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          96BW16D14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             73:4427-4432(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N.A.
                                                                                                                                                                 P:proteolysis and peptidolysis; IEA P:RNA dependent DNA replication; IEA P:viral life cycle; IEA.
                                                                                Integrase C.
Integrase Zn.
Peptidase A2.
Pept_A_acid.
                                                                                                                                     Aspprotease_AS.
Gag_p24.
                                       Retrov_capsid_C
Retrov_capsid_N
                                                                  Retrovir_p17
                          RNaseH
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TO PEPTIDASE FAMILY A2; ALSO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA
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ema M.J., Marlink R.,
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Matches
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PRINTS; PR00234; HIVLMATRIX.

SMART; SM00343; ZDF_C2HC; 2.

PROSITE; PS00141; ASP_PROTEASE; 1.

PROSITE; PS50175; ASP_PROT_RETROV; 1.

PROSITE; PS50158; ZF_CCHC; 2.

AIDS; Aspartyl protease; Core protein; Endonuclea Nucleotidyltransferase; Polyprotein; Protease;

RNA-directed DNA polymerase; Transferase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00540; Gag_p17; I.
Pfam; PF00607; Gag_p24; 1.
Pfam; PF00552; Integrase; 1.
Pfam; PF02022; Integrase Zn; 1.
Pfam; PF00075; rnaseH; 1.
Pfam; PF00077; rvp; 1.
Pfam; PF00079; rvv; 1.
Pfam; PF00098; zf-CCHC; 2.
 GO; G Q Q; GO; GO; GO; GO; G Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q79792
Q79792;
                                                                                                                                                                                                                                                               gene of the acquired immunodeficiency syndrome retrovirus. Proc. Natl. Acad. Sci. U.S.A. 83:5038-5042(1986).
-!- PTM: SPECIFIC ENZYMATIC CLEAVAGES IN VIVO YIELD MATURE
                                                                                                   PIR;
PIR;
PIR;
PIR;
                                                                                                                                                  PIR;
                                                                                                                                                                                     PIR;
                                                                                                                                                                                                                                                                                                MEDLINE=86259728; PubMed=3014529; Willey R.L., Rutledge R.A., Dias S., Folks T., Theodore T., Buckler C.E., Martin M.A.; Buckler C.E., Martin M.A.; "Identification of conserved and divergent domains within the envelope
                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=11676;
                                                                                                                                                                                                                                                                                                                                                                                                 Viruses;
                                                                                                                                                                                                                                                                                                                                                                                                  Human immunodeficiency virus 1.
Viruses; Retroid viruses; Retroviridae; Lentivirus
                                                                                                                                                                                                                                                                                                                                                                                                                         GAG-POL OR POL
                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-NOV-1996
01-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR001878; Znf_CCHC.
                                                                                                                                                                                                               EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1996
                                                                                                                                                                                                                                      (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                    STRAIN=NY5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
sp; p12497; 5HVP.
GO:0004190; F:aspartic-type endopeptidase activity;
GO:0003677; F:NA binding; IEA.
GO:0004519; F:endonuclease activity; IEA.
GO:0008907; F:integrase activity; IEA.
GO:0008233; F:peptidase activity; IEA.
GO:0008233; F:ribonuclease H activity; IEA.
GO:0004523; F:ribonuclease H activity; IEA.
                                                                                               A47330, A47330.

B47330, B47330.

C47330, C47330.

D47330, D47330.

B47330, E47330.

E47330, E47330.
                                                                                                                                                                                                                          KNOWN AS THE RETROPEPSIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               882 LAENGEILKEPVHGV 896
                                                                                                                                                                                                              M38431; AAB04037.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14 ITERGRILKEPVHGV 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                               (TrEMBLrel. (TrEMBLrel. )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1427 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA polymerase; Tran
427 AA; 160409 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                      (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         41.7%;
73.3%;
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01,
25,
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Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 60; DB Pred. No. 5.5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
                                                                                                                                                                                                                             FAMILY.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence update)
annotation updat
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5.5;
                                                                                                                                                                                                                                         PEPTIDASE FAMILY A2;
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                                                                                                                                                                                                                                                                 VIVO YIELD MATURE PROTEINS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CRC64;
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                                                                                                                                                                                                                                         ALSO
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DESCRIPTION OF STREET OF S
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P89972
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Best Local
                                                               EMBL; U21135; AAC32294.1; -.
PIR; A47330; A47330.
PIR; B47330; B47330.
PIR; C47330; C47330.
PIR; C47330; D47330.
PIR; B47330; E47330.
PIR; F47330; F47330.
PIR; F47330; F47330.
PIR; F47330; F47330.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P89972;
01-MAY-1997
01-MAY-1997
                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
Ghosh S., Ghosh E., Shaw G.M., Hahn B.;
"Human Immunodeficiency Virus type 1 complete
           HSSP;
GO; GO
                                                                                                                                                                                                                                                                                                                                     Submitted (FEB-1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pol polyprotein (Fragment).
GAG-POL OR POL.
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01-MAY-1997 (TrEMBLrel.
01-OCT-2003 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P89972
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PROSITE; PS00141; ASP PROTEASE; 1.

PROSITE; PS50175; ASP PROT RETROV; 1.

Aspartyl protease; EndonucTease; Hydrolase; Nucleotidyltransferase;

Polyprotein; Protease; RNA-directed DNA polymerase; Transferase.

NON TER

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InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro;
InterPro;
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                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=11676;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human immunodeficiency virus
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GO:0016740;
GO:0008270;
GO:0015074;
GO:0004190; F:aspartic-type endopeptidase activity; IEA. GO:0003677; F:DNA binding; IEA.
                                                                                                                                                                                                                                                                   mitted (FEB-1995) to the E PTM: SPECIFIC ENZYMATIC C (BY SIMILARITY).
SIMILARITY: THE PROTEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GO:0008270; F:zinc ion binding; IEA.
GO:0015074; P:DNA integration; IEA.
GO:0006310; P:DNA recombination; IEA.
GO:0006508; P:proteolysis and peptidolysis; IEA.
GO:0006578; P:RNA dependent DNA replication; IEA.
                                                                                                                                                                                                                                            KNOWN AS THE RETROPEPSIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              erPro; IPR001969; Aspprotease AS.
erPro; IPR001037; Integrase C.
erPro; IPR001308; Integrase Zn.
erPro; IPR001995; Peptidase A2.
erPro; IPR0019907; Pept A acid.
erPro; IPR00196; RNaseH.
erPro; IPR001516; RNaseH.
erPro; IPR000177; RVTse.
erPro; IPR000477; RVTse.
erpro; IPR000477; RVTse.
erpro; IPR00022; Integrase; 1.
erprofice VraseH.
erprofice VraseH.
erprofice AS.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              441
                                                    P04585;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14;
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                                                                                                                                                                                                                                                                                                                                                         K.A.:
                                                                                                                                                                                                                                                                                                                                                                              FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Retroid viruses;
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                                                  1RTH.
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F:transferase activity; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  39.6%;
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03,
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CLEAVAGES IN VIVO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation update)
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Pred. No.
                                                                                                                                                                                                                                              FAMILY
                                                                                                                                                                                                                                                                   BELONGS
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                                                                                                                                                                                                                                                              PEPTIDASE FAMILY A2; ALSO
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                                                                                                                                                                                                                                                                                                         YIELD MATURE PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                    genomic sequence.";
databases.
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GO; GO:0004519; F:endonuclease
GO; GO:0008907; F:integrase activity; IEA.
GO; GO:0008233; F:peptidase activity; IEA.
GO; GO:0004523; F:ribonuclease H activity; IEA.
GO; GO:0003723; F:RNA binding; IEA.
GO; GO:0003723; F:RNA binding; IEA.
GO; GO:0003724; F:RNA binding; IEA.
GO; GO:0003272; F:zinc ion binding; IEA.
GO; GO:0008270; F:zinc ion binding; IEA.
GO; GO:0005270; F:zinc ion binding; IEA.
GO; GO:0005270; F:zinc ion binding; IEA.
R GO; GO:0005270; F:zinc ion binding; IEA.
R GO; GO:0006510; P:DNA integration; IEA.
R GO; GO:0006510; P:DNA recombination; IEA.
R GO; GO:0006510; P:DNA recombination; IEA.
R GO; GO:0006510; P:DNA recombination; IEA.
R GO; GO:0006278; P:NA dependent DNA replication; IEA.
R GO; GO:0006278; P:NA dependent DNA replication; IEA.
DR InterPro; IPR001969; Aspprotease AS.
InterPro; IPR001969; Aspprotease AS.
InterPro; IPR001995; Peptidase AS.
InterPro; IPR001995; Peptidase A.
DR InterPro; IPR001584; Rve.
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Q7SKY9
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                                                                                  Query Match
Best Local S
Matches 14
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Best Local
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Pfam; PF02022; Integr
Pfam; PF00075; rnaseH
Pfam; PF00075; rve; 1
Pfam; PF00077; rve; 1
Pfam; PF00078; rvt; 1
                                                                                                                                                                                              NON TER
NON TER
SEQUENCE
                                                                                                                                                                                                                                                                                                    Gonzales M.J., Johnston E., Dupnik K.M., Imamichi T., Shafe "Colinearity of Reverse Transcriptase Inhibitor Resistance Detected by Population-Based Sequencing."; Submitted (JUL-2003) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q7SKY9;
01-OCT-2003 (TrEMBLrel.
01-OCT-2003 (TrEMBLrel.
01-OCT-2003 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human immunodeficiency virus 1. Viruses; Retroid viruses; Retro
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PROSITE; PS50175; ASP_PROT RETROV; 1.
Aspartyl protease; Endonuclease; Hydrolase; Nucleotidyltransferase;
Polyprotein; Protease; RNA-directed DNA polymerase; Transferase.
NON_TER 1
                                                                                                                                                                                                                                                                       RNA-directed DNA polymerase.
                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=3999-7303_4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=11676;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Reverse transcriptase
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                                                                                  ch 38.9%;
l Similarity 45.2%;
14; Conservative
6 KANSKFIGITERG----
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15; Conserv
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322 A
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                                                                                                                                                                                           AA;
                                                                                                                                                                                  322
; 37354 MW;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Retroviridae; Lentivirus
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                                                                                  Score 56; DB Pred. No. 4.4; 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
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--RILKEPVHGV 28
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                                                                                                                                     DB 15;
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RESULT Q7SKZ2

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Q7SKZ2

PRELIMINARY;

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KALTEVISLTEEAELELAENREILKEPVHGV 317

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RESULT

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AC Q80

AC Q80

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DT 011
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01-OCT-2003
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=3999-7303_1;
Gonzales M.J., Johnston E., Dupnik K.M., Imamichi T., Sh
Gonzales M.J., Johnston E., Dupnik K.M., Imamichi T., Sh
"Collinearity of Reverse Transcriptase Inhibitor Resistar
"Collinearity of Reverse Transcriptase Inhibitor Resistar
Detected by Population-Based Sequencing.";
Submitted (JUL-2003) to the EMBL/GenBank/DDBJ databases.
EMBL, AY351748; AAQ18856.1; -.
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NCBI_TaxID=11676;
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01-OCT-2003
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                                                                                                                                  GO; GO:0004190; F:aspartic-type endopeptidase activity; GO; GO:0008233; F:peptidase activity; IEA.
GO; GO:0003723; F:RNA binding; IEA.
GO; GO:0003724; F:RNA-directed DNA polymerase activity; IEA.
GO; GO:0006508; F:transferase activity; IEA.
GO; GO:0006508; P:proteoflysis and peptidolysis; IEA.
GO; GO:0006278; P:RNA dependent DNA replication; IEA.
                                                                                                                                                                                                                                                                                                                                                                               Eshleman S.H., Becker-Pergola G., Deseyve M., Mracna M., Guay L.A Cunningham S., Musoke P., Mmiro F., Jackson J.B.; Cunningham S., bubtype on women receiving single dose NVP prophylaxis to prevent HIV-1 vertical transmission (HIVNET012)."; Submitted (JUN-2001) to the EMBL/GenBank/DDBJ databases. Similarity: THE PROTERASE BELONGS TO PEPTIDASE FAMILY A2; ALSO KNOWN AS THE RETROPEPSIN FAMILY.
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                                                                                                                                                                                                                                                                                                                            EMBL; AF388147; AAL84089.1; -. HSSP; P03366; 3HVT.
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                         InterPro; IPR001969; Aspprotease AS.
InterPro; IPR001995; Peptidase AZ.
InterPro; IPR009007; Pept A acid.
InterPro; IPR000477; RVTse.
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Transcriptase Inhibitor Resistance Mutations
Based Sequencing.";
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Best Local
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STRAIN=755;
STRAIN=755;
Eshleman S.H., Becker-Pergola G., Deseyve M., Mracna M., Guay L.A.
Cunningham S., Musoke P., Mmiro F., Jackson J.B.;
Cunningham S., Musoke P., Mmiro F., Jackson J.B.;
"Impact of HIV-1 subtype on women receiving single dose NVP
prophylaxis to prevent HIV-1 vertical transmission (HIVNET012).";
Submitted (JUN-2001) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY A2; ALSO
KNOWN AS THE RETROPEPSIN FAMILY.
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PROSITE; PS00141; ASP PROTEASE; 1.
PROSITE; PS00175; ASP PROT RETROV; 1.
Aspartyl protease; Hydrolase; Protease; RNA-directed DNA polymerase;
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G0; G0:0004190; F:aspartic-type endopeptidase activity;
G0; G0:0008233; F:peptidase activity; IEA.

G0; G0:0008233; F:RNA binding; IEA.

G0; G0:0003723; F:RNA-directed DNA polymerase activity;
G0; G0:0003964; F:RNA-directed DNA polymerase activity;
G0; G0:0016740; F:transferase activity; IEA.

G0; G0:0006508; P:proteolysis and peptidolysis; IEA.

G0; G0:000678; P:RNA dependent DNA replication; IEA.
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PROSITE; PS50175; ASP_PROT_RETROV;
Aspartyl protease; Hydrolase; Prot
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                                          5 IKANSKFIGITERG----
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                                            ----RILKEPVHGV 28
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Best Local
                                                                    Reynes J., Delaporté E.;
"Genetic Diversity of Protease and Reverse Transcriptase non-subtype-b human immunodeficiency virus type 1 strain many minor drug resistance mutations in treatment-naive J. Clin. Microbiol. 38:3919-3925 (2000).

-!- SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY KNOWN AS THE RETROPEPSIN FAMILY.
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PROSITE;
PROSITE;
NON TER
NON TER
SEQUENCE
EMBL; AJ287045; CAC03087.1; PIR; A47330; A47330. PIR; C47330; C47330.
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01-OCT-2003 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
STRAIN-99FR-MP1321;
MEDLINE-20514217; PubMed=11060045;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-MAR-2003
01-MAR-2003
01-OCT-2003
                                                                                                                                                                                                                                                            Vergne L., Peeters M., Mpoudi-Ngole E.,
Toure-Kane C., Mboup S., Mulanga-Kabeya
Reynes J., Delaporte E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=11676,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human immunodeficiency virus 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9IDB5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9IDB5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN=tvgg04;
Brindeiro P.A., Brindeiro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q8AFL1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AY145784; AA012458.1; ...

GO; GO:0004101; F:aspartic-type endopeptidase activity; IEA.

GO; GO:0003723; F:RNA binding; IEA.

GO; GO:0003723; F:RNA-directed DNA polymerase activity; IEA.

GO; GO:0003964; F:RNA-directed DNA polymerase activity; IEA.

GO; GO:0006278; P:RNA dependent DNA replication; IEA.

InterPro; IPR001965; Aspprotease AS.

InterPro; IPR001965; Peptidase AS.

InterPro; IPR009007; Pept A.

InterPro; IPR009007; Pept A.

InterPro; IPR000477; RVTse.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PF00078; rvt;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PF00077; rvp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       l Similarity
14; Conserv
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KALTEVISLTEEAELELAENREILKEPVHGV 416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PS00141; ASP_PROTEASE; 1.
PS50175; ASP_PROT_RETROV;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Retroid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    viruses; Retroviridae;
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de Sa C.A.M., Machado D.M., Succi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----RILKEPVHGV 28
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Last annotation updat
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Last
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annotation
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                                                                                                       TO PEPTIDASE FAMILY A2;
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                                                                                                                                                                                                                                                                                     Bourgeois
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                                                                                                                                                                                                                                                                               Liegeois F.,
Jourdan J.,
                                                                                                                                                               patients.";
                                                                                                                                                                                                                          Sequences
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RESULT 11
Q71151
ID 07115
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Best Local
                                                                                       Ouinones-Mateu M.E., Holguin A., Dopazo J., Najera I., Domingo E.;
"Point mutant frequencies in the pol gene of human immunodeficiency
virus type 1 are two- to threefold lower than those of env.";
AIDS Res. Hum. Retroviruses 12:1117-1128(1996).
EMBL; U16771, BAC55688.1; -.
EMBL; U16773, BAC330.
PIR; A47330, B47330.
PIR; A47330, B47330.
PIR; A47330, B47330.
PIR; B47330, C47330.
PIR; C47330, C47330.
PIR; 547330, C47330.
PIR; F47330, E47330.
PIR; F47330, F47330.
PIR; F47330, F47330.
PIR; F47330, F47330.
PIR; F47330, F47330.
PIR; S32140, S32140.
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Q71151;
01-NOV-1996
       888
                                                                         HSSP; P03366; 1HRH.
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PIR; F47330; F47330.

HSSP; P04585; IRTH.

GO; GO:0004190; F:aspartic-type endopeptidase activity; IEA.

GO; GO:0008233; F:peptidase activity; IEA.

GO; GO:0003723; F:RNA binding; IEA.

GO; GO:0003724; F:RNA binding; IEA.

GO; GO:0003564; F:RNA-directed DNA polymerase activity; IEA.

GO; GO:0016740; F:transferase activity; IEA.

GO; GO:0006508; P:proteolysis and peptidolysis; IEA.

GO; GO:0006508; P:RNA dependent DNA replication; IEA.
                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=97000986; PubMed=8844016;
                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Quinones-Mateu M.E., Dopazo J., Este "Molecular characterization of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=96093896; PubMed=7576917;
Quinones-Mateu M.E., Dopazo J., E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human immunodeficiency virus 1.
Viruses; Retroid viruses; Retroviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Reverse transcriptase
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Pfam; PF00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                isolates from Venezuela.";
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PROSITE; PS50175; ASP PROT_RETROV;
Aspar_y1 protease; Hydrolase; Prot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
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InterPro; IPR001995; Peptidase AZ.
InterPro; IPR009007; Pept A acid.
InterPro; IPR0000477; Pept A acid.
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    ; GO:0004523;
; GO:0003723;
; GO:0003964;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KALTEVISLTEEAELELAENREILKEPVHGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hum. Retroviruses 11:605-616(1995)
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524 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
  ; F:ribonuclease 1; F:RNA binding; ; F:RNA-directed 1
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Pred. No. 7.5;
3; Mismatches
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DNA polymerase activity; IEA.
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                                              H activity; IEA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 J.A., Rota T.R., immunodeficiency
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                                                                                         A McCutchan F.E.;

A McCutchan F.E.;

Tamong 46 Near Full Length HIV Type 1 Genome Sequences from Rakai Tramong 46 Near Full Length HIV Type 1 Genome Sequences from Rakai Tramong 46 Near Full Length HIV Type 1 Genome Sequences from Rakai Tramong 46 Near Full Length HIV Type 2002).

In EMB1; AF484514; AAN73763.1; --

RE GG; GG:00004579; F:DAA binding; IEA.

RE GG; GG:00003677; F:DAA binding; IEA.

RE GG; GG:00003573; F:ribonuclease H activity; IEA.

RE GG; GG:00004523; F:RNA-directed DNA polymerase activity; IEA.

RE GG; GG:00003598; F:RNA-directed DNA polymerase activity; IEA.

RE GG; GG:00005198; F:structural molecule activity; IEA.

RE GG; GG:00008270; F:zinc ion binding; IEA.

RE GG; GG:00008270; F:DNA recombination; IEA.

RE GG; GG:0006508; P:DNA recombination; IEA.

RE GG; GG:0006508; P:DNA recombination; IEA.

RE GG; GG:0006508; P:RNA dependent DNA replication; IEA.

RE GG; GG:0006578; P:RNA dependent DNA replication; IEA.
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01-MAR-2003 (TrembLrel. 23, Li
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01-cct fusion polyprotein (f
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Pfam; PF00078; rvt; 1.
RNA-directed DNA polymerase; Transferase
                                                                  EMBL; AF48
GO; GO:0000
                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN=98UG57143;

MEDLINB=20564795; PubMed=11112486;

Salminen M.O., Ehrenberg P.K., Mascola J.R., Dayhoff D.E., Merling R.,

Blake B., Louder M., Hegerich S., Polonis V.R., Birx D.L., Robb M.L.,

McCutchan F.E., Michael N.L.;

"Construction and biological characterization of infectious molecular

clones of HIV-1 subtypes B and E (CRF01_AB) generated by the

polymerase chain reaction.";
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InterPro; IPR000477; RVTse.
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Viruses; Retroid viruses; Retroviridae;
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Kigozi G., Kiwanuka N., Phillips J.B., M
Lane J.R., Merling R., Gray R., Wawer M.
                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
STRAIN=98UG57143;
MEDLINE=22375625; PubMed=12487816;
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InterPro;
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GO:0006278; P:RNA dependent
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64354 MW;
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45.2%;
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Last annotation update)
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Pred. No. 8.1;
3; Mismatches
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utalo T.,
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InterPro;
                                                                                            HSSP; P03366; 1DLO.
GO; GO:0003723; F:RNA binding; IEA.
GO; GO:003964; F:RNA-directed DNA polymerase activity;
GO; GO:0016740; F:transferase activity; IEA.
GO; GO:0016778; P:RNA dependent DNA replication; IEA.
GO; GO:0006278; P:RNA dependent DNA replication; IEA.
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PRINTS; PR00234; HTV1MATRIX.
SMART; SM00343; ZDF C2HC; 2.
PROSITE; PS00141; ASP PROTEASE; 1.
PROSITE; PS50175; ASP PROT RETROV;
PROSITE; PS50158; ZF_CCHC; 2.
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Pfam; PF00540; Gag_p17; 1.
Pfam; PF00607; Gag_p24; 1.
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NON_TER
                                                                                                                                                             EMBL;
                                                                                                                                                                     Soto-Ramirez L.E., Tripathy S., Renjifo B., Essex M.; "HIV-1 pol sequences from India fit distinct subtype pattern."; J. Acquir. Immune Defic. Syndr. Hum. Retrovirol. 13:299-307(1996)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Polyprotein.
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                                       SEQUENCE
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PF02022; Integrase Zn;
PF00075; rnaseH; 1.
PF00665; rve; 1.
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 Conservative
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364
4; 42031 MW;
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Retrov_capsid_C.
Retrov_capsid_N.
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4; Mismatches
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                                                                               polymerase; Transferase
                                        F4F0479E008590AF CRC64
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R HSSP; P03366; 2HMI

GO; GO:0004190; F:sspartic-type endopeptidase activity; IEA

GO; GO:0008233; F:peptidase activity; IEA.

GO; GO:0003723; F:ENA binding; IEA.

GO; GO:0003723; F:ENA-directed DNA polymerase activity; IEA.

R GO; GO:0003964; F:ENA-directed DNA polymerase activity; IEA.

GO; GO:0006708; F:Pernaferase activity; IEA.

GO; GO:0006508; P:proteolysis and peptidolysis; IEA.

GO; GO:0006508; P:RNA dependent DNA replication; IEA.

GO; GO:0006278; F:RNA dependent DNA replication; IEA.

InterPro; IPR001969; Aspprotease AS.

InterPro; IPR001995; Peptidase AZ.

InterPro; IPR001997; Pept A_acid.

InterPro; IPR00477; RVTse.
                                                                                                                                                               Q8JDC4;
Q8JDC4;
01-0CT-2002
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STRAIN=607;

Eshleman S.H., Becker-Pergola G., Deseyve M., Mracna M., Guay L.A.

Cunningham S., Musoke P., Mmiro F., Jackson J.B.;

"Impact of HIV-1 subtype on women receiving single dose NVP

prophylaxis to prevent HIV-1 vertical transmission (HIVNET012).";

Submitted (JUN-2001) to the EMBL/GenBank/DDBJ databases.

-i- SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY A2; ALSO

KNOWN AS THE RETROPEDSIN FAMILY.
                                                               Human immunodeficiency virus 1. Viruses; Retroid viruses; Retro
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SEQUENCE
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01-JUN-2002
01-JUN-2002
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SEQUENCE FROM N.A
                                            NCBI_TaxID=11676;
                                                                                                                                      Pol protein
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13; Conserv
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PS50175; ASP_PROT_RETROV; 1.
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420 AA;
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21,
25,
                                                               Retroviridae; Lentivirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 55; DB:
Pred. No. 8.4;
4; Mismatches
                                                                                                                                                        Last sequence update)
Last annotation update)
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Search completed: July 20, Job time: 29.2295 secs

2004, 06:33:16

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D,
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                                                                                                                                         A Mracha M.R., Eshleman S.H.;

White Mracha M.R., Eshleman S.H.;

If "Impact of maternal HIV-1 subtype on Ugandan infants (HIVNET 012).";

L Submitted (AUG-2001) to the EMBL/GenBank/DDBJ databases.

REL; AP410250; AAN02560.1; -

REQ; GO:0004130; F:aspartic-type endopeptidase activity; IEA.

GO; GO:0003723; F:RNA binding; IEA.

GO; GO:0003723; F:RNA-directed DNA polymerase activity; IEA.

GO; GO:0003740; F:transferase activity; IEA.

GO; GO:0016740; F:transferase activity; IEA.

GO; GO:0006508; P:proteolysis and peptidolysis; IEA.

GO; GO:0006508; P:RNA-dependent DNA replication; IEA.

GO; GO:0006278; P:RNA dependent DNA replication; IEA.

InterPro; IPR001995; Peptidase AS.

InterPro; IPR001995; Peptidase AZ.

R InterPro; IPR001995; Peptidase AZ.

R InterPro; IPR001995; Peptidase AZ.

R InterPro; IPR001997; RVTse.
                                                                                    Query Match
Best Local
                                                                      Matches
                                                                                                                                                       RNA-directed DNA polymerase;
NON_TER 1 1
NON_TER 423 423
                                                                                                                                                                                                     Pfam; PF00077; rvp; 1.
Pfam; PF00078; rvt; 1.
PROSITE; PS00141; ASP_PROTEASE; 1.
PROSITE; PS50175; ASP_PROT_RETROV; 1.
                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=148154f;
   386
                                     σ
                                                                    l Similarity
13; Conserv
                                 KANSKFIGITERG-----RILKEPVHGV 28
KALTEVVSLTEEAELELAENREILKEPVHGV
                                                                                                                                    423
423 AA;
                                                                 Conservative
                                                                                                                                     48265 MW;
                                                                                    38.2%;
                                                                    4;
                                                                  Score 55; DB Pred. No. 8.4; 4; Mismatches
                                                                                                                                                                                       Transferase
                                                                                                                                    FEF645A37D43C405 CRC64;
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Result
No.
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Maximum Match 100%
Listing first 45 summaries
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Maximum DB
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  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
  Score
                                                                                                                                                                                                                                                                                                                                                   seq
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length: 2000000000
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1: geneseqp1980s:*
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3: geneseqp2000s:*
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144
  Match
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geneseqp2003bs:*
geneseqp2004s:*
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geneseqp2002s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20,
                                                                                                                                                                                    Length
  2004, 06:07:17; Search time 41.7705 Seconds (without alignments)
189.400 Million cell updates/sec
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                                                       ABB79179
AAW06132
AAW46447
        AAY92649
AAY92645
                     AAB20145
AAW81329
AAW81330
ABB07281
ABB07275
                                                                            AAR65383
AAR62723
AAY92638
AAY92652
AAY92651
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AAY92639
                                                                                                                                          AAY53551
ABB79182
AAY92665
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                                                                                                              AAR83561
                                                                                                                      AAR65389
                                                                                                                                                               AAY53552
                                                                                                                                                                       AAB84738
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              Abb07281
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Aay82632 Tetanus t
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                                                                                                                                                                                   Description
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Mutant hu
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Universal
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Universal
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Aay92640 Mutant hu Aay92646 Mutant hu Aay92646 Mutant hu Aay92641 Mutant hu Aay92641 Mutant nu Aay92641 Mutant nu Aay92641 Mutant cyt Abor9180 Human cyt Aay82636 Tetanus t Aab45490 Modified Aay82634 Tetanus t Aao30491 Human TNF Aao30499 Human TNF Aao30495 Human TNF Aao30492 Human TNF Aaoy92650 PSMpep007 Aaw06129 Anti-chol Aay026470 Fusion of Aay92647 Mutant hu Aay92644 Mutant hu Aay92644 Mutant hu Aay92644 Mutant hu Aay92644 Helper T
AAY92640  AAY92640  AAY92630  AAY92641  AAY92636  AAY82636  AAY82634  AAO30491  AAO30495  AAO30495  AAO30495  AAO30495  AAO30497  AAY92650  AAW06129  AAY92650  AAW92647  AAY92647  AAY92648  AAY92649  AAY92668  AAY92669
Aay92640 Aay92636 Aay92641 Aay92641 Aau11422 Abb79180 Aay82636 Aab45490 Aay82634 Aao30491 Aao30491 Aao30492 Aaw06129 Aaw06129 Aaw06129 Aay92664 Aay92664 Aay92664 Aay926644 Aar626692

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Claim 22; Page 26; 34pp; English.
                                                                                       Inducing systemic immune response cor
lipid-tailed proteins or lipopeptide
                                                                                                                                    Druilhe P,
                                                                                                                                                                                   09-DEC-1999;
                                                                                                                    WPI; 2001-451597/48
                                                                                                                                                                                                   08-DEC-2000; 2000WO-EP012794
                                                                                                                                                                                                                      14-JUN-2001.
                                                                                                                                                                                                                                       WO200141797-A2
                                                                                                                                                                                                                                                                        Key
Modified-site
                                                                                                                                                                                                                                                                                                       Synthetic.
                                                                                                                                                                                                                                                                                                                       sublingual
                                                                                                                                                                                                                                                                                                                                 Lipid-tailed protein; mucosal membrane; immune system; lipoprotein; B cell response; T cell response; intranasal immunisation;
                                                                                                                                                       (INSP ) INST PASTEUR. (UYLI-) UNIV LILLE 2.
                                                                                                                                                                                                                                                                                                                                                            Amino acid sequence of lipopeptide Nh2-K.
                                                                                                                                                                                                                                                                                                                         immunisation.
                                                                                                                                    Gras-Masse
                                                                                                                                                                                 99US-0169952P
                                                                                                                                                                                                                                                        /note= "amidated residue with palmitoyl lipid residue
with 16 carbon atoms attached via an epsilon bond"
                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                    H,
                                                                                       response comprises mucosal administration lipopeptide in absence of adjuvants.
                                                                                                                                     Benmohamed
                                                                                                                                    ۲
                                                                                               of.
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The present sequence represents a lipid-tailed protein. The lipid moiety is able to cross the mucosal membrane, and deliver an antigen to the immune system. The lipoprotein is administered to a mucosal membrane to induce an immune response. The lipoprotein induces a B cell and/or a T cell response. The lipoprotein is used to provide intranasal or

sublingual immunization

S<sub>O</sub>

Sequence

25

AA;

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GRQYI-KANSKFIGITERGRILKEP 24

Matches Query Match

24;

Conservative

<u>.</u>

Mismatches

Local

Similarity

77.4%;

Score 111.5; DB 4 Pred. No. 5.5e-11;

DB 4;

Length Indels

25;

1.

Gaps

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                           The invention relates to the generation of a lipopeptide comprising at least one auxiliary T epitope, at least one cytotoxic T lymphocyte (CTL) epitope and at least one lipid residue with (i) the epitopes and lipid portion and (ii) the epitopes, being separated independently by peptide spacers. These spacers comprise sequences of amino acids which carry an overall electrical charge in neutral media to ensure that the lipopeptide is hydrophilic. This peptide represents an example of them lipopeptide of the invention. It contains 2 lipid residues attached at the N-terminal end of the molecule and 2 epitopes separated by the spacer residues Serser and Ala-Ala-Ala. Peptides AAY53301-Y53549 represent peptide epitopes used in the generation of the lipopeptides. These are used in therapeutic responses against human immunodeficiency, hepatitis B or papilloma viruses; p53 of melanoma or the malaria parasite
                                                                                                                                                                                                                                                                                                                                                                                                     (INRM )
(CNRS )
(INSP )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07-APR-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   melanoma; malaria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lipopeptide; epitope; cytotoxic T lymphocyte; CTL; lipid; spacer; electrical charge; hydrophilicity; vaccine; immune response; HIV; human immunodeficiency virus; hepatitis B virus; papilloma virus;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY53552
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                                                                                                                                                                                                                                                                                             New lipopeptide containing lipid regions and two epitopes, all separated by peptide spacers that impart hydrophilicity, useful in vaccines.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     07-APR-1998;
Sequence 28
                                                                                                                                                                                                                                                               Example 1; Page 9; 35pp; French
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sapiens
                                                                                                                                                                                                                                                                                                                                                                         FA,
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INST PASTEUR LILLE.
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 AA;
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terminus and on the epsilon carbon of the side chain"
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Query Match

67 . 48;

Score

97;

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2;

Length 28;

Conservative

Mismatches

Indels

0

Gaps

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RESULT 3
AAY53551
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Matches 19; Conserv
                              Query Match
                                                                                    The invention relates to the generation of a lipopeptide comprising at least one auxiliary T epitope, at least one cytotoxic T lymphocyte (CTL) epitope and at least one lipid residue with (i) the epitopes and lipid portion and (ii) the epitopes, being separated independently by peptide spacers. These spacers comprise sequences of amino acids which carry an overall electrical charge in neutral media to ensure that the lipopeptide is hydrophilic. This peptide represents an example of them lipopeptide of the invention. It contains 2 lipid residues attached at the N-terminal end of the molecule and 2 epitopes separated by the spacer residues Serser and Ala-Ala-Ala. Peptides AAY53301-Y55549 represent peptide epitopes used in the generation of the lipopeptides. These are used in therapeutic or prophylactic compositions and vaccines to induce specific immune responses against human immunodeficiency, hepatitis B or papilloma viruses; p53 of melanoma or the malaria parasite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lipopeptide; epitope; cytotoxic T lymphocyte; CTL; lipid; spacer; electrical charge; hydrophilicity; vaccine; immune response; HIV; human immunodeficiency virus; hepatitis B virus; papilloma virus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  07-APR-1998;
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                                                                                                                                                                                                                                                                                                                                    New lipopeptide containing lipid regions and two epitopes, by peptide spacers that impart hydrophilicity, useful in va
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17; Conserv
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                                                            AA:
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terminus and on the epsilon carbon of the side
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5>...
100.0%; r.
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                               DB 2;
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RESULT 5
AAY92665
ID AAY9
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ABB79182
ID ABB7
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                                                                                                                                                                                                                                           The present invention describes a peptide (I) which is an immunogenic epitope recognised by CD8+ class I major histocompatibility complex (MHC) crestricted cytotoxic T-lymphocytes (CTL) of patients harbouring latent cytomegalovirus (HCMV) infection. Also described are: (1) a vaccine (II) against human cytomegalovirus (CMV), which comprises (I); (2) a cellular vaccine (III) against human cMV comprises antigen presenting cells which cytomegalovirus (CMV), which comprises (I); (3) a recombinant viral vector (IV) which contains a gene encoding (I); and (4) an immunological reagent (V) which comprises (I).

(II) has virucide activity. (II) or (III) are useful for modulating the immune response to HCMV infection, and for vaccinating a mammal in need of it against HCMV. (I) is useful for eliciting a cellular immune against HCMV by normal and immunodeficient subjects, for creating efficient vaccines against HCMV, and in immunological methods to detect pp150-reactive CTL in a patient or a sample from the patient. The present sequence represents a HCMV pp150 related vaccine peptide, which is given in the exemplification of the present invention
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                                                                                                                                                                      Query Match
Best Local (
                                                                                                                                                           Matches
          AAY92665 standard; peptide; 216 AA
                                                                                                                                                                                                                     Sequence 29 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Page 14; 28pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cytomegalovirus infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New immunoreactive peptide cytotoxic T-lymphocytes epitope of human cytomegalovirus PP150, useful for creating vaccines against
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2002-471432/50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20-OCT-2000; 2000US-0241944P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human cytomegalovirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CITY ) CITY OF HOPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22-OCT-2001; 2001WO-US032589.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cytotoxic T lymphocyte; immunoreactive; immunogenic; virucide; immune response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human cytomegalovirus PP150; HCMV; human leukocyte antigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human cytomegalovirus PP150 related vaccine peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABB79182 standard;
                                                                                                                                                                        Local Similarity
                                                                                           14
                                                                                                                   1 GRQYIKANSKFIGITE 16
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                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               peptide;
                                                                                                                                                 56...
100.0%; FI
                                                                                                                                                                   56.2%; Score 81;
100.0%; Pred. No.
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                                                                                                                                                       Mismatches
                                                                                                                                                                   DB 5;
7e-06;
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                                                                                                                                                                                  Length 29;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO:8.
                                                                                                                                                    o
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2 RQYIKANSKFIGITE--RGRILKEPVHGV 28

Matches Query Match Best Local

l Similarity 19; Conser

Conservative

0

Score 79; DB 3; Le Pred. No. 0.00016; 0; Mismatches 8;

Length 216; Indels

2;

Gaps

μ.

54.9%;

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The method is used for inducing immune responses against weakly communogenic cell-associated peptide antigens (PA) such as those associated with cancers (self-proteins), e.g. hPSM, heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method comprises effecting simultaneous presentation by antigen producing cells (APCS) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from the PA and/or at least 1 B-cell group derived from the C cell-associated PA; and (2) at least 1 first T helper cell group which is foreign to the animal. Analogues of human PSM, human Her2 and human/marine FGF8b comprising a substantial part of all known and predicted CTL and B-cell epitopes of the respective PA and including at least one foreign T helper spitope are also claimed. The method is used to treat prostate, prostate/breast or breast cancer when the PA is human PSM, FGF8b and Her2, respectively. Note: This sequence does not appear in the specification. It was made using the mucin repeat sequence (AAY92664), P2 and P30 (AAY92625-26), which appear on pages 220, 213 and call respectively, of the specification
                                                                                                                                                                                                                                                                                                                                                                       autovaccine to induce a CTL response. Subdominant CTL epitopes, binding regions and cysteine residues involved in disulfide bon preserved in the immunogenized forms (see features table). 10 r
                                                                                                                                                                                                                                                                                                                                                                                                                         This is an immunogenized MUC-1 analogue containing foreign epitopes P2 and P30. Immunogenic analogues of MUC-1 and, e.g. human prostate specimembrane antigen (hPSM) can be used in the claimed method as an
Sequence
                                                                                                                                                                                                                                                                                                                                                    preserved in the immunogenized forms (see features table). 10 regions suitable for the insertion of foreign T helper epitopes were identified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Example 4; Page; 220pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Inducing immune responses to weakly immunogenic, tumor associated peptide antigens for the treatment of breast and prostate cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   05-OCT-1998;
20-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mucin repeat; MUC-1 analogue; vaccination; self-protein; cancer; cytotoxic T-lymphocyte immunity; breast cancer; prostate cancer; cell-associated peptide antigen; foreign epitope.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2000-349917/30.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (MEBI-) M & E BIOTECH AS
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Birk P, Karlsson
ΑĀ;
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98US-0105011P.
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/label= P2
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/label= P30
/note= "q"
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                                                                                                                                                                                                                                                                                                                                                                                      bonds are
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                                                                                                                                                                                                                                                                                                                                                                                                          antibody
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RQYIKANSKFIGITELPAPGSTAPPAHGV 88

AAY82632 standard; peptide;

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QYIKANSKFIGITELGGHEIKKVLVPGCHG

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                                                        Matches
                                                                           Query Match
Best Local (
                                                                                                                                                                        especially hypersensitivities. These include rhinitis, sinusitis, bronchial asthma, atopic dermatitis, some forms of acute and chronic urticaria, gastro-intestinal syndromes associated with the ingestion of food allergens, oro-pharyngeal syndrome, anaphylactic reactions associated with drug hypersensitivities and/or a mixture of these. The use of (I) in the treatment of allergic conditions avoids the need for drug treatment, which often causes undesirable side-effects. Also, prior art drug therapies alleviate symptoms, but do not influence their causes, however (I) actually combats the cause of an allergic reaction. The present sequence represents a specifically claimed compound peptide sequence from the present invertice.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   atopic dermatitis; acute urticaria; chronic urticaria; gastro-intestinal syndrome; food allergen; oro-pharyngeal syndrome; anaphylactic reaction; drug hypersensitivity; allergic reaction.
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                                                                                                                                                                                                                                                                                                                                                                                treatment of allergy. The compound comprises at least one allergen antigenic determinant (i) recognised by a B cell or an antibody secreted by a B cell of a non-atopic individual and at least one antigenic determinant (ii) different from the allergen that triggers T cell activation. (I) has antiallergic, antiasthmatic, antiinflammatory. dermatological and immunosuppressive activities, and can be used in a vaccine. (I) may be used in a pharmaceutical or cosmetic medicament to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Saint-Remy J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-JUL-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Synthetic.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tetanus toxoid T cell epitope and Der pII B cell epitope peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    07-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 8; Page 35; 50pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      one
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                                                                                                                            Sequence 31
                                                                                                                                                              sequence from the present invention
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antiallergic; antiasthmatic; antiinflammatory; dermatological;
immunosuppressive; vaccine; rhinitis; sinusitis; bronchial asthma;
                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                compound for prevention and treatment of allergies comprises at least allergen antigenic determinant recognized by a B cell and at least antigenic determinant which does not trigger T cell activation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          present invention describes a compound (I) for the prevention and/or
                                                        18;
                                                                         Similarity
QYIKANSKFIGITERG----
                                                                                                                              AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tetani
                                                        Conservative
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                                                                       54.5%;
                                                                       Score 78.5; DB 3; Pred. No. 2e-05;
 -RILKEPVHG 27
                                                        Mismatches
                                                                                        Length 31;
                                                          Indels
                                                        ب.
س
                                                        Gaps
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RESULT 7
AAY92639
CC immune responses against weakly immunogenic cell-associated peptide e.g. chuman prostate specific membrane antigen (PSM), heregulin 2 (Herz) and/or cf ibroblast growth factor 8b (FGF8b). The method comprises effecting cell simultaneous presentation by antigen producing cells (APCs) of the canimals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) cell-associated PA; and/or at least 1 first T helper cell group which is cell-associated PA; and (2) at least 1 first T helper cell group which is cell-associated PA; and (2) at least 1 first T helper and comprise is comprised to the animal. Analogues of human PSM, human Her2 and comprised comprising a substantial part of all known and comprising a substantial part of all known and cell east one foreign T helper epitopes of the respective PA and including at cell east one foreign T helper epitope are also claimed. The method is used to treat prostate, prostate/breast or breast cancer when the PA is human PSM, PGF8b and Her2, respectively. Note: This sequence was constructed confirm the wild type human PSM (AAY92619), which appears on pages 184-187 cell from the wild type human PSM (AAY92619), which appears on pages 184-187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Prostate specific membrane antigen; immunogenized construct; mutant;
vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
                                                                                                                                                                                                                                                                                                                                       autovaccine to induce a CTL response. Subdominant CTL epitopes, antibounding regions and cysteine residues involved in disulfide bonds are preserved in the immunogenized forms. The method is used for inducing
                                                                                                                                                                                                                                                                                                                                                                                 AAY92627-49 are mutant immunogenized human prostate specific membrane antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30). The immunogenic analogues of PSM can be used in the claimed method as an autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Inducing immune responses to weakly immunogenic, tumor associated peptide antigens for the treatment of breast and prostate cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Steinaa L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          05-OCT-1998;
20-OCT-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      prostate cancer; cell-associated peptide antigen; foreign epitope
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 1; Page; 220pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2000-349917/30
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                                   the specification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Birk P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mouritsen S, Nie
Birk P, Karlsson
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98US-0105011P
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "foreign epitope"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nielsen
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Sequence 750

DB 3;

Length 750;

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Best Local S
Matches 17
                                                                                                    Synthetic immunogenic peptides are provided in which a universal immune stimulator is linked to a peptide or protein hapten containing B cell and/or cytotoxic T lymphocyte eptides giving a product which causes potent immune responses to the coupled peptide or protein. The stimulator consists of (A) a promiscuous helper T cell epicope (Th) which elicits an immune response to the coupled peptide in members of a heterogeneous population expressing diverse HLA phenotypes, and (B) an adjuvant peptide sequence from the invasin protein of Yersinia. Spacer amino acid members (A) of The Third The hermidal between the invasin protein of Yersinia.
                       sequences (e.g. Gly-Gly) can be provided between the invasin and Th domains and between the immune stimulator and hapten components. When the hapten is LHRH, then optionally the invasin domain can be omitted from the immune stimulator component. The present sequence is an example of a -GG-Th-GG-invasin immune stimulator to which a hapten can be bonded. (Updated on 25-MAR-2003 to correct PN field.)
                                                                                                                                                                                                                                   Disclosure; Page 95; 213pp; English.
                                                                                                                                                                                                                                                            Immunogenic luteinising hormone releasing hormone peptide(s) - that suppress LHRH activity in males and females.
                                                                                                                                                                                                                                                                                                          WPI; 1994-357910/44
                                                                                                                                                                                                                                                                                                                                      Ladd AE,
                                                                                                                                                                                                                                                                                                                                                                                                                       27-APR-1993;
14-APR-1994;
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21-SEP-1995
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tetanus toxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Helper T cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Universal immunostimulator having GG spacers.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAR65389;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAR65389 standard; peptide; 37 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-APR-1994;
                                                                                                                                                                                                                                                                                                                                                                  (ZAMB/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           304 KQYIKANSKFIGITELRGSLKVP 326
                                                                                                                                                                                                                                                                                                                                                                ) LADD A F
) WANG C Y
ZAMB T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 RQYIKANSKFIGITERGRILKEP 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 l Similarity
17; Conserv
                                                                                                                                                                                                                                                                                                                                   Wang CY,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (revised)
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            epitope;
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                                                                                                                                                                                                                                                                                                                                                                                                                       93US-00057166.
94US-00229275.
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3. .19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note= "tetanus toxin helper T cell epitope'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note= "invasin domain"
                                                                                                                                                                                                                                                                                                                                       Zamb
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73.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      universal immune stimulator; invasin; hapten;
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Pred. No.
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1; Mismatches
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Query Match Best Local Similarity

53.5**%**; 76.2**%**;

Score 77; Pred. No.

DB 2; ; 4.3e-05;

Length 37;

0;

Sequence

37

AA;

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RESULT 10
AAR65383
ID AAR65
                                                                                                                                                                                                                                 RESULT 9
AAR83561
ID AAR8
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Matches
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                                                                                                                                                                                                                                                               useful in vaccines for treating allergic reactions. In the immunogens, IgB CH4 peptide is attached C-terminally to a series of amino acids including a helper T cell epitope. The immunogen may also opt contain fatty acid or fatty acid derivative, an invasin domain or alpha-NH2. The immunogen produces high titres of antibodies to the effector site in human IgE heavy chain (the CH4 domain peptide) which inhibit mast cell activation and reduce allergen-induced IgE prodn. The immunogens may be used in either a radially branching multimeric form or a linearly
 25-MAR-2003
21-SEP-1995
                                      AAR65383;
                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                    Synthetic peptide-based immunogen contg. IgB CH4 peptide and helper T cell epitope - useful for eliciting antibody prodn. for allergy
                                                             AAR65383 standard; peptide; 37
                                                                                                                                                                                                                                                         arranged monomeric form
                                                                                                                                                                                                                                                                                                                                                        AAR82592-R82600 and AAR83560-R83581 are peptide immunogens that are useful in vaccines for treating allergic reactions. In the immunogens, an
                                                                                                                                                                                                                                                                                                                                                                                                 Claim 5; Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wang CY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28-MAR-1994;
25-OCT-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IGE CH4 region contg. peptide immunogen for treating allergies
                                                                                                                                                                                                                                                                                                                                                                                                                            treatment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1995-351297/45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24-MAR-1995;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (UNBI-) UNITED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                vaccine; allergy; antibody;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IGE; CH4; immunoglobulin; epsilon; immunogen; helper T cell; epitope;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAR83561 standard;
                                                                                                                                                                                          Local
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                                                                                                                                                                              l Similarity
15; Conser
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                                                                                                                         KQYIKANSKFIGITELG
                                                                                                                                                    ROYIKANSKFIGITERG 18
                                                                                                                                                                                                                                 29 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KQYIKANSKFIGITELGGTAK 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                               Conservative
(revised)
(first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                68-69; 87pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BIOMEDICAL INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94US-00218461.
94US-00328912.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               peptide;
                                                                                                                                                                                          52.8%;
88.2%;
                                                                                                                            18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                constant heavy chain
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                                                                                                                                                                                          Score 76; DB 2;
Pred. No. 4.7e-05;
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                                                                                                                                                                              Mismatches
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                                                                                                                                                                                                    Length 29;
                                                                                                                                                                              Indels
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contain a
""2. The
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RESULT 11
AAR62723
ID AAR62
XX AAR62
XX AAR62
XX 11
AC AAR62
XX 11
AC AAR62
XX 17
C5-MA
DT 17-SE
XX XX
                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                            8
                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                             Synthetic immunogenic peptides are provided in which a universal immune stimulator is linked to a peptide or protein hapten containing B cell and/or cytotoxic T lymphocyte epitopes, giving a product which causes potent immune responses to the coupled peptide or protein. The stimulator consists of (A) a promiscuous helper T cell epitope (Th) which elicits an immune response to the coupled peptide in members of a heterogeneous population expressing diverse HIA phenotypes, and (B) an adjuvant peptide sequence from the invasin protein of Yersinia. Spacer amino acid sequences (e.g. Gly-Gly) can be provided between the invasin and Th domains and between the immune stimulator and hapten components. When the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (LADD/) LADD A E
(WANG/) WANG C Y
(ZAMB/) ZAMB T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Кеу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Immunogenic luteinising hormone releasing hormone peptide(s) - that suppress LHRH activity in males and females.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27-APR-1993;
14-APR-1994;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Universal
                                                                                     AAR62723;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 1994-357910/44.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ladd AE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-APR-1994;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO9425060-A1
                                                                                                                                                                                                                                                                                               Sequence 37
                                                                                                                                                                                                                                                                                                                        hapten is LHRH, then optionally the invasin domain can be omitted from the immune stimulator component. The present sequence is an example of an invasin-6g-7h-6g- immune stimulator to which a hapten can be bonded. (Updated on 25-MAR-2003 to correct PN field.)
             LHRH-containing immunogenic peptide.
                                          25-MAR-2003
17-SEP-1995
                                                                                                            AAR62723 standard; peptide;
                                                                                                                                                                                    20
                                                                                                                                                                                                    2 RQYIKANSKFIGITERG 18
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                                                                                                                                                                                                                                          15;
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                                                                                                                                                                                    KOYIKANSKFIGITELG 36
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wang
                                                                                                                                                                                                                                                                                                 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Page
                                                                                                                                                                                                                                          Conservative
                                         (revised)
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CY,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Υ.Б
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94US-00229275.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      95; 213pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note= "tetanus toxin helper T cell epitope"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
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                                                                                                                 47
                                                                                                                                                                                                                                                      Score 76; DB 2;
Pred. No. 6.2e-05;
                                                                                                                 Å
                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                   Length 37;
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RESULT 12
AAY92638
ID AAY92
XX
AC AAY92
XX
DT 10-AU
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                                                                                                                                                                                                                   Best Loc
Matches
                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (LADD/) LADD A E
(WANG/) WANG C 1
(ZAMB/) ZAMB T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Helper T cell epitope; universal immune stimulator; invasin; hapten; vaccine; LHRH; luteinising hormone releasing hormone; prostate; androgen-dependent carcinoma; antitumour; infertility; tetanus toxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 8; Page 88; 213pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Immunogenic luteinising hormone releasing hormone peptide(s) - that suppress LHRH activity in males and females.
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14-APR-1994;
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                                                                                                                                                                                                                                                                                   Sequence 47 AA;
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                                                                 AAY92638 standard; protein; 750
                                                                                                                                                   20 KOYIKANSKFIGITELG
                                                                                                                                                                                                                     15:
                                                                                                                                                                           2 RQYIKANSKFIGITERG 18
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94US-00229275.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note= "LHRH hapten"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       note=
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                                                                                                                                                                                                                                    52.8%;
88.2%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       H
                                                                                                                                                                                                                                    Score 76;
Pred. No.
                                                                     A
                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                    DB 2; 1
                                                                                                                                                                                                                                                    Length 47;
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                                                                                                                                                                                                                        Gaps
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10-AUG-2000 AAY92638;

(first entry)

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ANY92627-49 are mutant immunogenized human prostate specific membrane CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30). The immunogenic analogues of PSM can be used in the claimed method as an autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody CC binding regions and cysteine residues involved in disulfide bonds are CC preserved in the immunogenized forms. The method is used for inducing CC immune responses against weakly immunogenic cell-associated peptide CC antigens (PA) such as those associated with cancers (self-proteins), e.g. CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or CC fibroblast growth factor 8b (FGF8b). The method comprises effecting CC simultaneous presentation by antigen producing cells (APCS) of the CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) CC group derived from the PA and/or at least 1 B-cell group derived from the CC cell-associated PA; and (2) at least 1 first T helper cell group which is CC human/murine FGF8b comprising a substantial part of all known and CC predicted CTL and B-cell epitopes of the respective PA and including at the treat prostate, prostate/breast or breast cancer when the PA is human CC psm, FGF8b and Her2, respectively. Note: This sequence was constructed CC from the wild type human PSM (AAY92619), which appears on pages 184-187 CC of the specification
                                                                                                            Query Match
Best Local S
Matches 15
                                                                                                                                                                                                                        Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-349917/30.
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20-OCT-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Peptide
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                                           GROYIKANSKFIGITE 16
GNOYIKANSKFIGITE
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                                                                                                         Conservative
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98US-0105011P.
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/note= "foreign epitope"
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                                                                                                                                52.8%;
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                                                                                                                                                    Length 750;
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Score 75; Pred. No. Mismatches

DB 3; L . 5.7e-05;

Length 25;

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Gaps

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ROYIKANSKFIGITE 16

19

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CC AAY92650-55 are peptides designed which correspond to the P2 and P30 CC epitopes with 5 flanking human prostate specific membrane antigen (hPSM) CC amino acids in each end. The flanking amino acids correspond to the CC epitope insertion sites 6, 8 and 10. The peptides will be used in, e.g. T CC The claims detail a method for inducing immune responses against weakly CC immunogenic cell-associated peptide antigens (PA) such as those CC associated with cancers (i.e. self-proteins), for example, hPSM, CC heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method CC comprises effecting simultaneous presentation by antigen producing cells (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-CC lymphocyte) group derived from the PA, and/or at least 1 He-cell group CC derived from the Cell-associated PA; and (2) at least 1 first T helper CC cell group which is foreign to the animal. Analogues of human PSM, human CC and predicted CTL and B-cell epitopes of the respective PA and including CC at least one foreign T helper epitope (e.g. P2 and/or P30) are also CC claimed. The method is used to treat prostate, prostate/breast or breast cancer when the PA is human PSM, FGF8b and Her2, respectively
Sequence
                                                                                                                                                                                                                                                                                                                                                                           Example 1; Page 117; 220pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2000-349917/30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Foreign epitope; P2; prostate specific membrane antigen; vaccination; cytotoxic T-lymphocyte immunity; self-protein; cancer; breast cancer; prostate cancer; cell-associated peptide antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-OCT-1998;
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25
                                                                                                                                                                                                                                                                                                                                                                                                         immune responses to weakly immunogenic, tumor associated peptide for the treatment of breast and prostate cancer.
AA,
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                                                                                                                                              CC epitopes with 5 flanking human prostate specific membrane antigen (hPSM) CC emino acids in each end. The flanking amino acids correspond to the CC epitope insertion sites 6, B and 10. The peptides will be used in, e.g. T CC cell proliferation assays, but also for ELISA or other in vitro assays. CC The claims detail a method for inducing immune responses against weakly CC immunogenic cell-associated peptide antigens (PA) such as those CC associated with cancers (i.e. self-proteins), for example, hPSM, the regulin 2 (Herz) and/or fibroblast growth factor 8b (FGF8b). The method CC comprises effecting simultaneous presentation by antigen producing cells (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-CC (lymphocyte) group derived from the PA, and (2) at least 1 B-cell group CC derived from the cell-associated PA; and (2) at least 1 First T helper CC cell group which is foreign to the animal. Analogues of human PSM, human CC and predicted CTL and B-cell epitopes of the respective PA and including at least one foreign T helper epitope (e.g., P2 and/or P30) are also CC claimed. The method is used to treat prostate, prostate/breast or breast vec
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                                                          Query Match
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Matches 15
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Inducing immune responses to weakly immunogenic, tumor associated peptide antigens for the treatment of breast and prostate cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-349917/30.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Steinaa L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-OCT-1998;
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                         RQYIKANSKFIGITE 16
ROYIKANSKFIGITE 19
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                                                                                                                       AA;
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Birk P, Karlsson G;
                                                           Conservative
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                                                                            100.0%;
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                                                                          Score 75;
Pred. No.
                                                             Mismatches
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RESULT 15
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                                                                                                                                                        The present invention describes a peptide (I) which is an immunogenic compiled ty CD8+ class I major histocompatibility complex (MHC) (C epitope recognised by CD8+ class I major histocompatibility complex (MHC) (C cytomegalovirus (HCMV) infection. Also described are: (I) a vaccine (II) cytomegalovirus (HCMV) which comprises (I); (2) a cellular (I) against human CMV comprises antigen presenting cells which cytomegalovirus (CMV), which comprises (I); (2) a cellular (I) cytomegalovirus (IV) which contains a gene (I) are conding (I); and (4) an immunological reagent (V) which contains a gene (I) has virucide activity. (II) or (III) are useful for modulating the (I) may response to HCMV infection, and for vaccinating a mammal in need (I) is useful for eliciting a cellular immune against HCMV by normal and immunological mathods to detect PP150 reactive CTL in a patient or a sample from the patient. The present (I) sequence represents a HCMV PP150 related vaccine peptide, which is given in the exemplification of the present invention
                                                                Query Match
Best Local Similarity
Matches 17; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New immunoreactive peptide cytotoxic T-lymphocytes epitope of human cytomegalovirus PP150, useful for creating vaccines against cytomegalovirus infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABB79179 standard; peptide; 31 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Page 14; 28pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human cytomegalovirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cytotoxic T lymphocyte; immunoreactive; epitope;
immunogenic; virucide; immune response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cytotoxic
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human cytomegalovirus PP150 related vaccine peptide
                                                                                                                                Sequence 31 AA;
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 QYIKANSKFIGITEAAAQTVTSTPVQG
                               OYIKANSKFIGITERG--RILKEPVHG 27
                                                                   Conservative
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Search completed: July 20, 2004, 06:30:27 Job time: 42.7705 secs

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Minimum DB
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168
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pir2:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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RNA-directed DNA p	-directed DNA	-directed DNA	-directed	DNA	-directed DNA	-directed DNA	-directed DNA	-directed DNA	-directed DNA	-directed DNA	-directed DNA	-directed DNA	DNA	RNA-directed DNA p

## ALIGNMENTS

R;Shirasaka, T.; Yarchoan, R.; O'Brien, M.C.; Husson, R.N.; Anderson, B.D.; Kojima, E.; Proc. Natl. Acad. Sci. U.S.A. 90, 562-566, 1993
A;Title: Changes in drug sensitivity of human immunodeficiency virus type 1 during thera A;Reference number: A47330; MUID:93133828; PMID:8380641
A;Accession: F47330 밁 Š A; Molecule type: DNA A; Residues: 1-210 <SHI> A; Status: preliminary; not compared with conceptual translation RNA-directed DNA polymerase (EC 2.7.7.49) - human immunodeficiency virus type 1 (strain N;Alternate names: DNA nucleotidyltransferase (RNA-directed); reverse transcriptase; rev C;Species: human immunodeficiency virus type 1, HIV-1 (C;Date: 17-Jul-1994 #sequence\_revision 17-Jul-1994 #text\_change 22-Apr-1995 C;Accession: F47330 C; Keywords: nucleotidy Itransferase C; Superfamily: pol polyprotein Best Query Match Match 46.4%; Local Similarity 69.2%; 142 SSMIKILEPFRKONPDIVIYOYMDDL 167 18; 9 SKFIGITE--RGRNPDIVIYQYMDDL 32 Conservative 1; Score 78; D Pred. No. 0. Mismatches DB 2; J. 0017; 5; Length 210; Indels 2; Gaps 1;

A;Molecule type: DNA
A;Residues: 1-210 <SHI>
C;Superfamily: pol polyprotein
C;Keywords: nucleotidyltransferase; polymorphism C;Accession: D47330

R;Shirasaka, T.; Yarchoan, R.; O'Brien, M.C.; Husson, R.N.; Anderson, B.D.; Kojima, E.; Proc. Natl. Acad. Sci. U.S.A. 90, 562-566, 1993
A;Title: Changes in drug sensitivity of human immunodeficiency virus type 1 during thera A;Reference number: A47330; MUID:93133828; PMID:8380641
A;Accession: D47330 밁 Ś RNA-directed DNA polymerase (EC 2.7.7.49) - human immunodeficiency virus type 1 (strain N;Alternate names: DNA nucleotidyltransferase (RNA-directed); reverse transcriptase; rev C;Species: human immunodeficiency virus type 1, HIV-1 C;Date: 17-Jul-1994 #sequence\_revision 17-Jul-1994 #text\_change 22-Apr-1995 A; Status: preliminary; not compared with conceptual D47330 Query Match Best Local Local Similarity 152 17 RGRNPDIVIYQYMDDL 32 RKONPDIVIYOYMDDL Conservative 44.6%; <u>.</u> Score 75; [ Pred. No. 0. Mismatches DB 2; 0.0045; immunodeficiency virus type 1 during thera Length 210; translation Indels 0, Gaps 0;

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A; Residues: C; Superfamil C; Keywords:
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R;Shirasaka, T.; Yarchoan, R.; O'Brien, M.C.; Husson, R.N.; Anderson, B.D.; Kojima, Proc. Natl. Acad. Sci. U.S.A. 90, 562-566, 1993
A;Title: Changes in drug sensitivity of human immunodeficiency virus type 1 during A;Reference number: A47330; MUID:93133828; PMID:8380641
A;Accession: B47330
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C;Superfamily: pol polyprotein
C;Keywords: nucleotidyltransferase
                                                                                                                                  NNA-directed DNA polymerase (EC 2.7.7.49) - human immunodeficiency virus type 1 (strain NyAlternate names: DNA nucleotidyltransferase (RNA-directed); reverse transcriptase; rev C; Species: human immunodeficiency virus type 1, HIV-1 C; Date: 17-Jul-1994 #sequence_revision 17-Jul-1994 #text_change 22-Apr-1995 C; Accession: C47330 R; Shirasaka, T.; Yarchoan, R.; O'Brien, M.C.; Husson, R.N.; Anderson, B.D.; Kojima, E.; Proc. Natl. Acad. Sci. U.S.A. 90, 562-566, 1993 A; Title: Changes in drug sensitivity of human immunodeficiency virus type 1 during thera A; Reference number: A47330; MUID:93133828; PMID:8380641
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A;Residues: 1-210 <SHI>
C;Superfamily: pol polyprotein
C;Keywords: nucleotidyltransferase; polymorphism
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                                             A; Molecule type: DNA
A; Residues: 1-210 <SHI>
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;Superfamily: pol polyprotein ;Keywords: nucleotidyltransferase;
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                               R; Wildemann, B.; Haas, J.; Ehrhart, submitted to the EMBL Data Library,
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         A;Description: In
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C;Accession: B47330
R;Shirasaka, T.; Yarchoan, R.; O'Brien, M.C.; Husson, R.N.; Anderson, Proc. Natl. Acad. Sci. U.S.A. 90, 562-566, 1993
A;Title: Changes in drug sensitivity of human immunodeficiency virus A;Reference number: A47330; MUID:93133828; PMID:8380641
A;Accession: E47330
                                                                                                                                                                                                                                                                                                                                      RNA-directed DNA polymerase (EC 2.7.7.49) - human immunodeficiency virus type C;Species: human immunodeficiency virus type 1, HIV-1 C;Date: 22-Nov-1993 #sequence_revision 10-Nov-1995 #text_change 26-Aug-1999 C;Accession: S32139
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A; Residues: 1-210 <SHI>
C; Superfamily: pol polyprotein
C; Keywords: nucleotidyltransferase;
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C;Date: 17-Jul-1994 #sequence_revision 17-Jul-1994 #text_change 22-Apr-1995
                                                                                                                                                A;Cross-references: EMBL:X71106; NID:g287982; C;Superfamily: pol polyprotein C;Keywords: nucleotidyltransferase
                                                                                                                                                                                                    A;Description: In vivo occurance
A;Reference number: S32117
A;Accession: S32139
A;Molecule type: DNA
A;Residues: 1-219 <WILL
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A;Description: In vivo occurance of drug resistance mutations under p
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0.0047;
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A;Description: In vivo comparison of zidovudine resistance in blood
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N;Alternate names: reverse transcriptase
C;Species: human immunodeficiency virus type 1, HIV-1
C;Date: 22-Nov-1993 #sequence revision 10-Nov-1995 #text_change 26-Aug-1999
C;Accession: S32077
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(1) Species: human immunodeficiency virus type 1, HIV-1
(2) Date: 22-Nov-1993 #sequence_revision 10-Nov-1995 #text_change 26-Aug-1995
(2) Accession: S32079
(3) First Revision: Revision 10-Nov-1995 #text_change 26-Aug-1995
(3) R; Wildemann, B.; Haas, J.; Ehrhart, K.; Hahn, M.; Storch-Hagen, B.
(3) R; Wildemann, B.; Haas, J.; Ehrhart, K.; Hahn, M.; Storch-Hagen, B.
(4) Ridemann, B.; Haas, J.; Ehrhart, K.; Hahn, M.; Storch-Hagen, B.
(4) R; Wildemann, B.; Haas, J.; Ehrhart, K.; Hahn, M.; Storch-Hagen, B.
(5) R; Wildemann, B.; Haas, J.; Ehrhart, K.; Hahn, M.; Storch-Hagen, B.
(6) R; Wildemann, B.; Haas, J.; Ehrhart, K.; Hahn, M.; Storch-Hagen, B.
(7) R; Wildemann, B.; Haas, J.; Ehrhart, K.; Hahn, M.; Storch-Hagen, B.
(8) R; Wildemann, B.; Haas, J.; Ehrhart, K.; Hahn, M.; Storch-Hagen, B.
(8) R; Wildemann, B.; Haas, J.; Ehrhart, K.; Hahn, M.; Storch-Hagen, B.
(8) R; Wildemann, B.; Haas, J.; Ehrhart, K.; Hahn, M.; Storch-Hagen, B.
(8) R; Wildemann, B.; Haas, J.; Ehrhart, K.; Hahn, M.; Storch-Hagen, B.
(9) R; Wildemann, B.; Haas, J.; Ehrhart, K.; Hahn, M.; Storch-Hagen, B.
(9) R; Wildemann, B.; Haas, J.; Ehrhart, K.; Hahn, M.; Storch-Hagen, B.
(9) R; Wildemann, B.; Haas, J.; Ehrhart, K.; Hahn, M.; Storch-Hagen, B.
(9) R; Wildemann, B.; Haas, J.; Ehrhart, K.; Hahn, M.; Storch-Hagen, B.
(9) R; Wildemann, M.; Storch-Hagen, M.; Storch-Hagen, B.
(9) R; Wildemann, M.; Storch-Hagen, B.
(9) R; Wildemann, M.; Storch-Hagen, M.; Storch-Hagen, M.; Storch-Hagen, M.; Ehrhart, M.; Storch-Hagen, M.; Storch-Hagen, M.; Storch-Hagen, M.; Ehrhart, M.; Storch-Hagen, M.; Storch-Hagen, M.; Storch-Hagen, M.; Storch-Ha
                                                                                                                                                                                                                                                                                                                                     A;Cross-references: EMBL:X70609; NID:g287700; PIDN:CAA49963.1; C;Superfamily: pol polyprotein C;Keywords: nucleotidyltransferase
                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: DNA
A; Residues: 1-219 <WIL>
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A;Accession: S32077
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;Residues: 1-219 <WIL>
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Pred. No. 0.0047;
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Pred. No. 0.0047;
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RESULT 12
S32074
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C;Species: human immunodeficiency virus type 1, HIV
C;Date: 22-Nov-1993 #sequence_revision 10-Nov-1995
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                                                                         C;Superfamily: pol polyprotein
C;Keywords: nucleotidyltransferase
                                                                                                        A;Cross_references: EMBL:X70607; NID:g287696;
                                                                                                                           A; Molecule type: DNA
A; Residues: 1-219 <WIL>
                                                                                                                                                                     A; Reference number: A; Accession: S32073
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A; Residues: 1-219 <WIL>
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A;Molecule type: DNA
A;Residues: 1-219 <WIL>
A;Residues: 1-219 <WIL>
A;Cross-references: EMBL:X70608; NID:g287698; PIDN:CAAA9962.1;
C;Superfamily: pol polyprotein
C;Keywords: nucleotidyltransferase
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(,Species: human immunodeficiency virus type 1, HIV-1
(,Date: 22-Nov-1993 #sequence_revision 10-Nov-1995 #text_change C,Accession: S32075
R,Wildemann, B.; Haas, J.; Ehrhart, K.; Hahn, M.; Storch-Hagen, submitted to the EMBL Data Library, January 1993
A,Description: In vivo comparison of zidovudine resistance in bl A,Reference number: S32047
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   Similarity 14; Conserv
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Score 75; DB 2;
Pred. No. 0.0047;
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Pred. No.
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                                                                                                          PIDN:CAA49961.1;
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A;Molecule type: DNA
A;Residues: 1-219 <WIZ:
A;Residues: 1-219 <WIZ:
A;Cross-references: EMBL:X70596; NID:g287689; PIDN:CAA49950.1; PID:g938197
C;Superfamily: pol polyprotein
C;Keywords: nucleotidyltransferase
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A;Description: In vivo comparison of zidovudine resistance in blood and CSF of HIV-1 inf A;Reference number: S32047
A;Accession: S32080
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A;Residues: 1-219 <MIL>
A;Residues: 1-219 <MIL>
A;Cross-references: EMBL:X70598; NID:g287693; PIDN:CAA49952.1; PID:g938200
A;Accession: S32067
                                                                                                                                                                                                                                                                                                                                   A;Molecule type: DNA
A;Residues: 1-219 <WIL>
A;Cross-references: EMBL:X70611; NID:g287703; PIDN:CAA49965.1; PID:g938210
C;Superfamily: pol polyprotein
C;Keywords: nucleotidyltransferase
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168
1 GRQYIKANSKFIGITERGRNPDIVIYQYMDDL 32
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### SUMMARIES

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InterPro; IPR001037; Integrase_C.
InterPro; IPR003308; Integrase_Cn.
InterPro; IPR003007; Pept_A_acid.
InterPro; IPR001995; Peptidase_A2
InterPro; IPR001995; RNaseH.
InterPro; IPR001584; Rve.
InterPro; IPR001584; Rvse.
Pfam; PF00552; integrase; 1.
Pfam; PF00752; Integrase_Zn; 1.
Pfam; PF00765; rve; 1.
Pfam; PF00765; rve; 1.
Pfam; PF00767; rve; 1.
                      Pfam; PF00078; rvt; 1.
PROSITE; PS00141; ASP_PROT_RETROV; 1.
PROSITE; PS50175; ASP_PROT_RETROV; 1.
PROSITE; PS50175; Hydrolase; Asparty1 protease; End AIDS; Polyprotein; Hydrolase; Asparty1 protease; Nuclease; Transferase; RNA-directed DNA polymerase; PROTEASE.
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13-AUG-1987 (Rel. 05, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin)
POL polyprotein [Contains: Protease (Retropepsin)
Protein [6]
                                                                                                                       Kervinen J., Lubkowski J., Zdanov A., Bhatt D., Dunn B. Powell D.J., Kay J., Wlodawer A., Gustchina A.; "Toward a universal inhibitor of retroviral proteases: analysis of the interactions of LP-130 complexed with F HIV-1, FIV, and ETAV.";
                                                                                                                                                                                                                                               Ogata N.,
Submitted
                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
MEDLINE=87299196; PubMed=3040055;
Rather L., Fisher A., Jagodzinski L.L., Mitsuya H.,
Gallo R.C., Wong-Staal F.;
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         "Three-dimensional solution structure of the HIV-1 with DMP323, a novel cyclic urea-type inhibitor, de nuclear magnetic resonance spectroscopy."; Protein Sci. 5:495-506(1996).
                                                 MEDLINE=97022126; PubMed=8868486; Yamazaki T., Hinck A.P., Wang Y.-X., Nic Wingfield P., Stahl S.J., Kaufman J.D., Lam P.Y.S.;
                                                                                                                                                                                                                                                                                                                                                                    Viruses; Retroid
NCBI_TaxID=11706;
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13-AUG-1987 (Re
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Viruses, Retroid viruses, Retroviridae; Lentivirus.
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                                                                                                                                                                                                        Submitted (MAR-1999)
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-i- CATALYTIC ACTIVITY: Specific for a P1 residue that is hydrophobic and P1' variable, but often Pro.
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MEDLINE=97268683; PubMed=9108091;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hopkins A.L., Ren J., Esnouf R.M., Willcox B.E., Jones E.Y., Ross C., Miyasaka T., Walker R.T., Tanaka H., Stammers D.K., Stuart D.I., "Complexes of HIV-1 reverse transcriptase with inhibitors of the HEPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      X-RAY CRYSTALLOGRAPHY (2.6 ANGSTROMS) OF 156-595.
MEDLINE=96097398; PubMed=8535785;
Ren J., Esnouf R.M., Hopkins A.L., Ross C., Jones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=98356189;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=96208551; PubMed=8648598;
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SIMILARITY: THE
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1RTH;
1RTI;
1RTI;
1RVG;
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1RT1;
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een the Swiss Institute of Bioinfo
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AF033819;
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         03-APR-96.
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Bioinformatics and the EMBL outstation
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InterPro; IPR0030308; Integrase Zn.
InterPro; IPR003087; Pept A acid.
InterPro; IPR001995; Peptidase A2.
InterPro; IPR001955; RNaseH.
InterPro; IPR001564; RVe.
InterPro; IPR001477; RVTse.
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                                                                                                                                                                                                                                                                                                         J. Biol. Chem. 265:14209-14219(1990).
-!- CATALYTIC ACTIVITY: Specific for a P1 residue the and P1' variable, but often Pro.
-!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to
                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=90354401; PubMed=2201682; Fitzgerald P.M.D., McKeever B.M., Springer J.P., Helmbach J.C., Leu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. (CLONE PNL4-3).
Buckler C.E., Buckler-White A.J., Willey R.L., McCoy J.
Submitted (JUN-1988) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-0CT-1989 (Rel. 12, Last sequence update)
10-0CT-2003 (Rel. 42, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin) (EC
Reverse transcriptase (EC 2.7.7.49); Ribonuclease H (E
  POL.
                                                                                                           EMBL;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human immunodeficiency virus type 1 (New York-5 isolate)
                                                                                                                                                                                                                                                                                                                                                             resolution.";
                                                                                                                                                                                                                                                                                                                                                                       "Crystallographic analysis of immunodeficiency virus type 1
                                                                                                                                                                                                                                                                                                                                                                                                Darke P.L.;
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CATALYTIC ACTIVITY: N deoxynucleoside triphosphate
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PDB; 9HVP; 15-JUL-92.
HIV; M19921; POL$NL43
               MEDLINE=90148544; PubMed=2559749;
Huet T., Dazza M.C., Brun-Vezinet F., Roelants
"A highly defective HIV-1 strain isolated from
individual presenting an atypical western blot.
AIDS 3:707-715(1989).
                                                                                                          01-FEB-1991 (Rel. 17, Created)
01-FEB-1991 (Rel. 17, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin)
Reverse transcriptase (EC 2.7.7.49); Ribonuclease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR001969; Aspprotease_AS
InterPro; IPR001037; Integrase_C.
InterPro; IPR00308; Integrase_C.
InterPro; IPR009007; Pept_A_acid.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEROPS;
                                                                       Human immunodeficiency virus type 1 (OYI isolate) (HIV-1). Viruses; Retroid viruses; Retroviridae; Lentivirus. NCBI TaxID=11699;
                                                          SEQUENCE FROM N.A.
        CATALYTIC ACTIVITY: Specific
and P1' variable, but often Pro.
                                                                                                                                                                                                       327 RKONPDIVIYOYMDDL 342
                                                                                                                                                                                                                      17 RGRNPDIVIYOYMDDL 32
                                                                                                                                                                                                                                        14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A02.001;
                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POL$NL43.
                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                 150
154
                                                                                                                                                                                                                                              44.6%;
87.5%;
                                                                                                                                                                                                                                                                         113535 MW; EB9CDBA30E114A55 CRC64;
                                                                                                                                                                                                                                        1;
                                                                                                                                                                                                                                                  Pred. No. 0.0037;
                                                                                                                                                                                                                                                         Score 75;
                                                                                                                                                              PRT;
                                                                                                                                                                                                                                       Mismatches
        for a
                                                                                                                                                              1003
         P1
                                                                                                                                                                                                                                                         DB 1;
                                                                                                                                                               Æ
          residue
                                                                                                                                                                                                                                                          Length 1003;
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                                  .E., Wain-Hobson
healthy Gabones
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          that
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H (EC 3.1.26.4
          is hydrophobic
                                    Gabonese
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RRA RRA
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POL_HVJ
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Matches
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InterPro; IPR001037; Integrase C.
InterPro; IPR00330B; Integrase Zn.
InterPro; IPR003007; Pept A acid.
InterPro; IPR001995; Pept Idase A2.
InterPro; IPR0012156; RNaseH.
InterPro; IPR001594; Rve.
InterPro; IPR000477; RVTse.
                                                                                                                                                                                             MINT
   Gurgo C., Gi
Farrell K.,
"Envelope se
                                                                                                                                     P05961;
01-NOV-1988
01-NOV-1988
28-FEB-2003
                                                                                                                                                                                                                                                                                                                                           Nuclease;
CHAIN
ACT_SITE
                                                                                                                         POL
                                                                                                                                                                                                                                                                                                                                 ACT_SITE
SEQUENCE
                                                                            Human immunodeficiency virus type 1 (MN Viruses; Retroid viruses; Retroviridae;
                                  SEQUENCE FROM N.A. MEDLINE=88219542;
                                                                    Viruses; Retroid
NCBI_TaxID=11696;
                                                                                                                                                                                                                                                                                                                                                                         Pfam; PF00078; rvt; 1.

PROSITE; PS00141; ASP PROTEASE; 1.

PROSITE; PS50175; ASP PROT RETROV; 1.

ALDS; Polyprotein; Hydrolase; Aspartyl protease;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam;
Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entities requires a license agreement (Some send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               use by non-profit institutions as long as its content modified and this statement is not removed. Usage by an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Enthe European Bioinformatics Institute. There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; M26727; AAA83392.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEROPS; A02
                                                                                                                                                                                                                                                                                                Local
                                                                                                           NOV-1988 (Rel. 09, Last sequence update)
FEB-2003 (Rel. 41, Last annotation update)
polyprotein [Contains: Protease (Retropepsin)
posser transcriptase (EC 2.7.7.49); Ribonuclease
                                                                                                                                                                                 MULVH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ); P03366;
M26727; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HEALTHY GABONESE INDIVIDUAL.
SIMILARITY: THE PROTEASE BEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      determined.
MISCELLANEOUS: THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PTM: Cleavage sites that yield the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  phosphomonoester CATALYTIC ACTIVITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATALYTIC
                                                                                                                                                                                                                                         327
                                                                                                                                                                                                                                                                                                                                                                                                           PF00665; rve; 1.
PF00077; rvp; 1.
PF00078; rvt; 1.
                                                                                                                                                                                                                                                              17
                                                                                                                                                                                                                                                                                                                                                                                                                                            PF00552; integrase;
PF02022; Integrase
PF00075; rnaseH; 1.
                                                                                                                                                                                                                                                                                    14;
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                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                      RKONPDIVIYOYMDDL 342
                                                                                                                                                                                                                                                     RGRNPDIVIYQYMDDL 32
           Guo H.-G., Fr
   sequences
                                                                                                                                                                                                                                                                                                                                                           Transferase; RNA-directed DNA polymerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AS THE RETROPEPSIN FAMILY
                                                                                                                                                                                                                                                                                                                                 1003
                                                                                                                                               (Rel.
                                                                                                                                                                                                                                                                                   Conservative
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81
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                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   integrase; 1.
Integrase_Zn;
                                                                                                                                                                                                                                                                                                                                 AA;
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           PubMed=3369091;
G., Franchini G., Aldovini A.,
Staal F., Gallo R.C., Reitz M.
                                                                                                                                                                                                                                                                                                                                                       155
                                                                                                                                                                                                                                                                                                                                          81
                                                                                                                                                                                                                                                                                              44.6%;
                                                                                                                                                                                                                                                                                                                              113718 MW;
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   new
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                                                                                                                                                                                                                                                                                            Score 75;
Pred. No.
                                                                                                                                                                                                                                                                                                                                        BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                    PROTEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BELONGS
                                                                                                                                                                               PRT;
  United
                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                            AFE997A0EDB88A98
 States HIV-1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                           0.0037;
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                                                                                       isolate) (HIV-1).
                                                                                                                                                                                                                                                                                                       DB 1;
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                                                                                                                                                                               ΑA
                                                                                                                                                                                                                                                                                                     Length 1003;
                    Collalti E.,
                                                                                                                                                                                                                                                                                                                                                                        Endonuclease;
                                                                                                           (EC 3.4.23.16);
H (EC 3.1.26.4)].
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                                                                                                                                                                                                                                                                                                                             CRC64;
isolates.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   THE BLOOD
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Pfam; PF02022; Integrase Zn
Pfam; PF00075; rnaseH; 1.
Pfam; PF000665; rve; 1.
Pfam; PF00077; rvp; 1.
Pfam; PF00078; rvt; 1.
                                                                                                                                      POL HV1B5
P04587;
13-AUG-1987
01-NOV-1988
10-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHAIN
ACT SITE
SITE
                                                 Human immunodeficiency virus type 1 (BH5 Viruses; Retroid viruses; Retroviridae; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROSITE; PS00141; ASP_PROTEASE; 1.
PROSITE; PS50175; ASP_PROT_RETROV; 1.
AIDS; Polyprotein; Hydrolase; Aspartyl
AIDS; Polyprotein; Hydrolase; Aspartyl
                                NCBI_TaxID=11682;
                                                                                                      Reverse
                                                                                                                       POL polyprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
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InterPro;
 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nuclease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Virology 164:531-536(1988).

-!- CATALYTIC ACTIVITY: Specific for a P1 residue that and P1' variable, but often Pro.

-!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to 5'-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HSSP; P03366
HIV; M17449;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; M17449;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entities requires a license agreement (Some send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     use by non-profit institutions as long modified and this statement is not removed.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -!- MISCELLANEOUS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro;
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SIMILARITY: THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PTM: Cleavage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   phosphomonoester.
CATALYTIC ACTIVITY: N deoxynucleoside triphosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY: THE PROTEASE BELONGS KNOWN AS THE RETROPEPSIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           determined.
                                                                                                                                                                                                                                                                                                          330
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                                                                                                                                                                                                                                                                                                                                                                                14;
                                                                                                      transcriptase
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                                                          87 (Rel. 05, Createu,
88 (Rel. 09, Last sequence update,
103 (Rel. 42, Last annotation update)
107 (Contains: Protease (Retropepsin) (Interpretate (EC 2.7.7.49); Ribonuclease Heaves (EC 2.7.7.49); Ribonuclease (E
                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       p; IPR001037; Integrase C.
p; IPR003308; Integrase Zn.
p; IPR0039007; Pept A acid.
p; IPR001995; Peptidase A2.
p; IPR002156; RNaseH.
p; IPR001584; Rve.
p; IPR000477; RVTse.
                                                                                                                                                                                                                                                                                                      RKONPDIVIYOYMDDL 345
                                                                                                                                                                                                                                                                                                                                          RGRNPDIVIYOYMDDL 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    565 5
1006 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IPR001969; Aspprotease_AS
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                                                                                                                                                                                                                STANDARD;
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84
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87.5%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    MW;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IN-FRAME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ВУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROTEASE.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protease;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAKEN FROM A PEDIATRIC
                                                                                                                                                                                                                                                                                                                                                                                           DB 1;
0.0037;
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                                                 Lentivirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         polymerase
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Endonuclease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                CODON.
                                                                  (HIV-1)
                                                                                                                     OH)
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                                                                                                .4.23.16);
3.1.26.4)].
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MEDLINE=85111123; PubMed=2578615;
Ratner L., Haseltine W., Patarca R., Livak K.J., Starcich B.R.,
Josephs S.F., Doran E.R., Rafalski J.A., Whitehorn E.A.,
Baumeister K., Ivanoff L., Petteway S.R. Jr., Pearson M.L.,
Lautenberger J.A., Papas T.S., Ghrayeb J., Chang N.T., Gallo R.
                                                                                                                                                                                                                                        PDB;
PDB;
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                                           InterPro;
Pfam; PF00
                                                                                                       InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                     or send an email to license@isb-sib.ch).
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InterPro;
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                                                                      InterPro;
                                                                               InterPro;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATALYTIC ACTIVITY: Specific for a P1 residue that is hydrophobic, and P1' variable, but often Pro.
CATALYTIC ACTIVITY: Endonucleolytic cleavage to 5'-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    phosphomonoester.
CATALYTIC ACTIVITY: N deoxynucleoside triphosphate = N diphosphate
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2BPV;
2BPW;
                                                                                                                                                                                                                                                                           1FFI;
1FG6;
1FG8;
1FGC;
1FGC;
1G2K;
1HPV;
1HTF;
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1FFO;
1FFF;
                                                                                                                                                                                                      10DX;
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1K1T;
1K1U;
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                         PF00552;
PF02022;
PF00075;
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                                                                                                                                                                                                                                                                     1HVP;
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                                                                                                                                                                                                                                                                                                                                                                                           1BDL;
         PF00665;
PF00077;
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requires a license agreement (See)
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                                                                             IPR003308;
IPR009007;
IPR001995;
                                                   IPR000477;
                                                             IPR002156;
IPR001584;
                                                                                                       IPR001969;
IPR001037;
                                                                                                                                                                                                                                                                          31-MAR-95.
31-JUL-94.
30-APR-94.
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01-JUN-01.
01-JUN-01.
01-JUN-01.
01-JUN-01.
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rve; 1. rvp; 1. rvt; 1.
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                         rnaseH;
                                            integrase;
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Integrase C.
Integrase Zn.
Pept A acid.
Peptidase A2.
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                                                                      RNaseH.
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FAMILY.
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                                                                                                                                                                                                                                                                                                                                                                                                                              oved. Usage by and for commercial (See http://www.isb-sib.ch/announce/
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Best Local
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PO3567;

21-JUL-1986 (Rel. 01, Created)

01-NOV-1988 (Rel. 09, Last sequence update)

10-OCT-2003 (Rel. 42, Last annotation update)

POL polyprotein [Contains: Protease (Retropepsin)

Reverse transcriptase (EC 2.7.7.49); Ribonuclease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACT SITE SEQUENCE
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PROSITE; PS50175; ASP_PROT_RETROV: 1.
PROSITE; PS50175; ASP_PROT_RETROV: 1.
PROTESS: Polyprotein; Hydrolase; Aspartyl protease; Endonuclease;
Nuclease; Transferase; RNA-directed DNA polymerase; 3D-structure.
CHAIN 69 167
PROTEASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human immunodeficiency virus type 1 (BRU isolate) (HIV-1). Viruses; Retroid viruses; Retroviridae; Lentivirus. NCBI_TaxID=11686;
                                                                                                                                                                                                                             ---
                                                                                                                                                                                                                                                   MEDLINE=92190341; PubMed=1799632;
Spinelli S., Liu Q.Z., Alzari P.M., Hirel P.H., I
"The three-dimensional structure of the aspartyl
                                                                                                                                                                                                                                                                                                                                                                                           Alizon M., Wain-Hobson S., Montagnier L., "Genetic variability of the AIDS virus: n of two isolates from African patients.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=85099333; PubMed=2981635; Wain-Hobson S., Sonigo P., Danos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM
                                                                                                            This SWISS-PROT entry is copyright. It is produced between the Swiss Institute of Bioinformatics and the European Bioinformatics Institute. There are
                                                             entities requires a license agreement (or send an email to license@isb-sib.ch)
                                                                                       use by non-profit institutions as long modified and this statement is not removed
                                                                                                                                                                                                                                                                                                       HIV-1 isolate BRU."
                                                                                                                                                                                                                                                                                                                                                                                  Cell 46:63-74(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                REVISIONS
                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=86245056;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wain-Hobson S., Sonigo P., Danos O., Cole S., Alizon "Nucleotide sequence of the AIDS virus, LAV.";
                                                                                                                                                                                                                                                                                                                                                         K-RAY CRYSTALLOGRAPHY (2.7 ANGSTROMS).
                                                                                                                                                                            determined.
SIMILARITY:
                                                                                                                                                                                                 PTM: Cleavage sites that yield the mature
                                                                                                                                                                                                                             phosphomonoester.
CATALYTIC ACTIVITY: N deoxynucleoside triphosphate =
                                                                                                                                                               SIMILARITY: THE PROTEASE BELONGS KNOWN AS THE RETROPEPSIN FAMILY.
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87.5%;
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115015 MW; F79F0CB4A
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Pred. No. 0.
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                                                                         noved. Usage by and fo
(See http://www.isb-sib
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0.0038;
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                                                                                                                                                                                                                                                                                                                                                                                                           nucleotide
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                                                                                                                                       through
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                                                                                                                 restrictions
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                                                                                                                              gh a collaboration EMBL outstation -
                                                                                                                                                                                                                                N diphosphate
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PDB; PDB; PDB;

1HHP; 1A8G;

EMBL; K02013; -; NOT\_ANNOTATED\_CDS

15-OCT-92.

1D4S;

03-MAY-00

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Best Local
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**ROSITE; PS00141; ASP ...

**AIDS; Polyprotein; Hydro
Nuclease; Transferase; RN.
CHAIN

**CT SITE 93 93

**RAND 93 93

**RAND 87 92

**ND 94 95

**ND 102

**111 117

**118 119

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**131 136

**132 136

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**136 137

**161
                                                                                                                                                                                                               Matches
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Pfam; PF002022; Integrase_Zn; 1
Pfam; PF00075; rnaseH; 1.
Pfam; PF00665; rve; 1.
Pfam; PF00077; rvp; 1.
Pfam; PF00078; rvt; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR001969; Aspprotease AS.
InterPro; IPR001037; Integrase C.
InterPro; IPR0010370; Integrase Zn.
InterPro; IPR0019007; Pept A_acid.
InterPro; IPR001995; Peptidase A2.
InterPro; IPR0012156; RNaseH.
InterPro; IPR001584; Rve.
InterPro; IPR000477; RVT98.
InterPro; IPR000477; RVT98.
                                                                                                                                AATAH
B LTC
                                                                            POL_HV1PV
P03368;
21-JUL-1986
01-NOV-1988
10-OCT-2003
                                               21-JUL-1986 (Rel. 01, Created)
01-NOV-1988 (Rel. 09, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin) (EC Reverse transcriptase (EC 2.7.7.49); Ribonuclease H (FPOL.
                           Human immunodeficiency virus type 1 (PV22 isolate)
Viruses; Retroid viruses; Retroviridae; Lentivirus
SEQUENCE
                  NCBI_TaxID=11700;
                                                                                                                                                                                                                                                         SEQUENCE
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1HOS;
1HPO;
1HPS;
1HPX;
1HSG;
1HTE;
1HVL;
1UPJ;
2UPJ;
7UPJ;
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                                                                                                                                                                                                                         Similarity
FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                    PS00141; ASP PROTEASE; 1.
PS50175; ASP PROT_RETROV; 1.
PS50175; ASP PROT_RETROV; 1.
Lyprotein; Hydrolase; Aspartyl protease; End
Lyprotein; Hydrolase; RNA-directed DNA polymerase;
                                                                                                                                                                      RKQNPDIVIYQYMDDL 354
                                                                                                                                                                                          RGRNPDIVIYOYMDDL 32
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21-APR-97.
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162
1015
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                                                                                                                     STANDARD;
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87.5%;
                                                                                                                                                                                                                                                      115031 MW;
                         Retroviridae; Lentivirus
                                                                                                                                                                                                             1;
                                                                                                                                                                                                                              Score 75;
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No.
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                                                                                                                                                                                                                               Length 1015;
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                                     (1-AIH)
                                                       EC 3.4.23.16);
(EC 3.1.26.4)].
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Best Local
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InterPro; IPR009007; I
InterPro; IPR001995; I
InterPro; IPR002156; I
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ACT_SITE
                                                                                   SEQUENCE
                                                                                                        PROSITE; PS00141; ASP_PROTEASE; 1.

PROSITE; PS50175; ASP_PROT_RETROV; 1.

PROSITE; PS50175; ASP_PROT_RETROV; 1.

AIDS; Polyprotein; Hydrolase; Aspartyl protease; Endonuclease; Nuclease; Transferase; RNA-directed DNA polymerase; 3D-structu CHAIN 69 167 PROTEASE.
                                                                                                                                                                                                Pfam;
Pfam;
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Pfam;
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                                                                                                                                                                                    Pfam;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (XXX-1987) to the HIV data bank.

-!- CATALYTIC ACTIVITY: Specific for a P1 residue the and P1 variable, but often Pro.

-!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Muesing M.A.;
Submitted (XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=85111157; PubMed=2982104;
Muesing M.A., Smith D.H., Cabradilla C.D., Benton C
Capon D.J.,
"Nucleic acid structure and expression of the human
"Nucleic acid structure are expression of the human
ALDS/lymphadenopathy retrovirus.";
                                                                                                                                                                                                                                                InterPro; IPR000477;
                                                                                                                                                                                                                                                          InterPro; IPR001584;
                                                                                                                                                                                                                                                                                                                       InterPro; IPR001037;
                                                                                                                                                                                                                                                                                                                                    InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REVISION
                                                                                                                                                                           m; PF00552; integrase; 1.
m; PF02022; Integrase Zn; 1.
m; PF00075; rnaseH; 1.
m; PF00665; rve; 1.
m; PF00077; rvp; 1.
                                                                                                                                                                                                                                                                                                                                                                                                           ; LAJV; 20-AUG-97.
; LAJX; 17-SEP-97.
; LAJX; 07-SUN-01.
; LGMM; 08-NOV-96.
; LHTG; 31-JUL-94.
; LHVI; 30-APR-94.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       phosphomonoester.
CATALYTIC ACTIVITY: N deoxynucleoside triphosphate = N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KINOWN AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIMILARITY: THE PROTEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        determined.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PTM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1A9M; 17-JUN-98.
1AJV; 20-AUG-97.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A03967;
                                                                                                                                                                       PF00078; rvt;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         313:450-458(1985).
                                              Similarity
                                                                                                                                                                                                                                                                                                                                                 A02
RGRNPDIVIYQYMDDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cleavage sites that
                                                                                                                                                                                                                                                                                                                                  IPR001969;
                                                                                                                                                                                                                                                                                                                                                                        04-FEB-03
                                                                                                                                                                                                                                                                                                                                                                                 04-FEB-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                )
(N)
                                                                                   1015 AA;
                                                                                                                                                                                                                                                                                                                                                                                                06-MAR-02.
                                                                                                                                                                                                                                                                                                                                                 .001;
                                  Conservative
                                                                                                                                                                                                                                                                                                                                                            POL$PV22
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               THE RETROPEPSIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NOT_ANNOTATED_CDS
                                                                                                                                                                                                                                                                                            Aspprotease AS.
Integrase C.
Integrase Zn.
Pept A_acid.
                                                                                               93
                                             44.6%;
87.5%;
                                                                                                                                                                                                                                            RVTse.
                                                                                 115090 MW;
                                                                                                                                                                                                                                                                      RNaseH.
                                                                                                                                                                                                                                                                                 Peptidase_A2
          32
                                Pred. No. 0.

1; Mismatche
                                                                                             PROTEASE.
BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FAMILY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  yield the
                                  Mismatches
                                                                                 51529D18EAC2AF89 CRC64;
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                                                          DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P1 residue that is
                                           .0038;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PEPTIDASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Benton C.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Usage,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                proteins remain to be
                                                       Length 1015;
                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FAMILY
                                                                                                                     3D-structure
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Lasky L.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         hydrophobic,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       diphosphate
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PRESENTATION OF THE PROPERTY O
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T 01-FEB-1991 (Rel. 17, Crear)
T 01-FEB-1991 (Rel. 17, Last sequence upcomposed (Rel. 17, Last sequence upcomposed (Rel. 17, Last annotation update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE POL polyprotein [Contains: Protease (Retropepsin) (EC POL polyprotein [Contains: Frotase (Retropepsin) (EC Reverse transcriptase (EC 2.7.7.49); Ribonuclease H (
                                            8
뫄
                                                                                                Query Match
Best Local S
Matches 13
                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR001969; Aspprotease_AS.
InterPro; IPR001037; Integrase_C.
InterPro; IPR0010308; Integrase_Zn.
InterPro; IPR003308; Integrase_Zn.
InterPro; IPR003007; Pept_A_acid.
InterPro; IPR001995; Peptidase_A2.
InterPro; IPR001955; RNaseH.
InterPro; IPR00156; RNaseH.
InterPro; IPR000477; RVTse.
Pfam; PF00202; Integrase; 1.
Pfam; PF00075; rnaseH; 1.
Pfam; PF00075; rnaseH; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HV1JR
POL_I
                                                                                                                                                                                                ACT SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HIV;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human immunodeficiency virus type 1 (JRCSF isolate) (HIV-1).
Viruses; Retroid viruses; Retroviridae; Lentivirus.
                                                                                                                                                                                                                                                                      PROSITE; PS00141; ASP_PROTEASE; 1.
PROSITE; PS50175; ASP_PROTEATROV; 1.
PROSITE; PS19protein; Hydrolase; Aspartyl p
Nuclease; Transferase; RNA-directed DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; M38429; AAB03745.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HSSP;
                                                                                                                                                                                                                                                 CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEROPS; A02.001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HVlJR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             phosphomonoester.
CATALYTIC ACTIVIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and P1' variable, but often Pro. CATALYTIC ACTIVITY: Endonucleolytic cleavage to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mitted (DEC-1988) to the HIV data bank.

CATALYTIC ACTIVITY: Specific for a Pl residue that is hydrophobic, and Pl' variable, but often Pro.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY: THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     determined
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P03366;
  331 RKQNPDIIIYQYMDDL 346
                                                                                                                                                                                                                                                                                                                                                                           PF00078; rvt;
                                                                                                                                                                                                                                                                                                                                                                                                PF00077; rvp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (N) {AND}
                                                 17
                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               į,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cleavage sites that yield the mature proteins
                                              RGRNPDIVIYOYMDDL 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ARITY: THE PROTEASE BELONGS TO AS THE RETROPEPSIN FAMILY.
                                                                                                                                                                                                61
85
1007
                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chen I.S.Y.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACTIVITY: N deoxynucleoside triphosphate
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                                                                                                                                                                                                  AA;
                                                                                                                                                                                                                                                   159
                                                                                                                                                                                                                         85
                                                                                                                       44.0%;
81.2%;
                                                                                                                                                                                                  114081
                                                                                                                                                                                                  MW
                                                                                                  2;
                                                                                                                       Score 74;
Pred. No.
                                                                                                                                                                                                                                                   PROTEASE
                                                                                                                                                                                                                         SIMILARITY
                                                                                                     Mismatches
                                                                                                                                                                                                  B123656C2EF3411A CRC64;
                                                                                                                         DB 1;
0.0053;
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                                                                                                                                                                                                                                                                                                  protease;
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                                                                                                                                                                                                                                                                        polymerase.
                                                                                                                                              Length 1007;
                                                                                                                                                                                                                                                                                                     Endonuclease;
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                                                                                                     Gaps
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RESULT 10
POL_HV1Y2
                                                           SETING REPRESENTED TO SERVICE OF COLOR COL
                                                                                                                                                                                                                                                                             Pfam; PF00552; integrase; 1.
Pfam; PF02022; Integrase Zn; 1
Pfam; PF00075; rnaseH; 1.
Pfam; PF00665; rve; 1.
Pfam; PF00077; rve; 1.
Pfam; PF00078; rvt; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P35963;
01-JUN-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P35963;
01-JUN-1994 (Rel. 29, Createu,
01-JUN-1994 (Rel. 29, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin)
POL polyprotein [Contains: Protease (Retropepsin) Polyprotein [Contains: Polypro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PIR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -i- CATALYTIC ACTIVITY: Specific for a P1 residue the and P1' variable, but often Pro-i- CATALYTIC ACTIVITY: Endonucleolytic cleavage to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        [1]
SEQUENCE FROM N.A.
MEDLINE=93021387; PubMed=1404605;
MEDLINE=93021387; PubMed=1404605;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Complete nucleotide sequence, genome organization, properties of human immunodeficiency virus type 1 i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Viruses; Retroid viruses; NCBI_TaxID=36377;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human immunodeficiency virus type 1 (YU-2 isolate)
Viruses; Retroid viruses; Retroviridae; Lentivirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POL_HV1Y2
                                                                                                            PROSITE; PS00141; ASP PROTEASE; 1.

PROSITE; PS50175; ASP PROT_RETROV; 1.

AIDS; Polyprotein; Hydrolase; Aspartyl protease; Enc.

Nuclease; Transferase; RNA-directed DNA polymerase;
CHAIN 57 155 PROTEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEROPS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. between the Swiss Institute of Bio:
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Shaw G.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               interPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1K6C; 06-FEB-02.

1K6P; 06-FEB-02.

1K6T; 06-FEB-02.

1K6T; 06-FEB-02.

1K6T; 06-FEB-02.

1KJA; 13-MAY-98.

1WJA; 13-MAY-98.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KNOWN AS THE RETROPEPSIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY: THE PROTEASE BELONGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PTM: Cleavage sites that yield the mature proteins remain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         phosphomonoester.
CATALYTIC ACTIVITY: N deoxynucleoside
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B44001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         M93258; -; NOT_ANNOTATED_CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               {DNA} (N).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IPR003308; Integrase_Zn.
IPR009007; Pept_A_acid.
IPR001995; Peptidase_A2.
IPR002156; RNaseH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IPR000477; RVTse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IPR001037;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IPR001969; Aspprotease_AS
                                                           81
1003
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                              ÃΑ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Integrase_C
                                                                 113794
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                                                                                               SIMILARITY
                                                                 D2F7187FE4EE8F49 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1003
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Length 1003;
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                                                                                                                                                                                              Endonuclease;
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H (EC 3.1.26.4)].
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                                                                                                                                                                 3D-structure
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Query Match

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Matches
                                                                                                                                                                                                                                                                                              InterPro; IPR001969; Aspprotease AS.
InterPro; IPR00137; Integrase C.
InterPro; IPR001370; Integrase Zn.
InterPro; IPR003308; Integrase Zn.
InterPro; IPR001995; Pept A_acid.
InterPro; IPR001995; Pept idase A2.
InterPro; IPR002156; RNaseH.
InterPro; IPR002156; RVe.
InterPro; IPR0001594; Rve.
InterPro; IPR0001594; Rve.
InterPro; IPR000477; RVIse.
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Pfam; PF00065; rve; 1.

Pfam; PF00077; rvp; 1.

Pfam; PF00077; rvp; 1.

Pfam; PF00078; rvt; 1.

PROSITE; PS00141; ASP_PROTEASE; End.

Nuclease; Transferase; RNA-directed DNA polymerase; CHAIN

S6 154

PROTEASE;

ACT_SITE 80 80

SEQUENCE 1002 AA; 113537 MW; 569A29D69ACC6AC5 CR
                                                                                                                                                                                                                                                                             Pfam; PF00552; integrase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; X04415; CAA28012.1; -. EMBL; A07116; CAA00619.1; -. PDB; 1HHJ; 31-OCT-93.
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Alizon M., Wain-Hobson S., Montagnier L., Sonigo P.
"Genetic variability of the AIDS virus: nucleotide
of two isolates from African patients.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Viruses; Retroid
NCBI_TaxID=11697;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human immunodeficiency virus type 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-NOV-1988 (Rel. 09, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin)
Reverse transcriptase (EC 2.7.7.49); Ribonuclease
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13-AUG-1987 (Re
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CATALYTIC ACTIVITY: N deoxynucleoside triphosphate
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KNOWN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    K03456; POL$MAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation-Buropean Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way field and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                PF02022; Integrase_Zn;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               46:63-74 (1986)
                                                                                                                                                                                                                                  PF00075; rnaseH; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s requires a license agreement (See http://www.isb-sib.an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cleavage sites
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (Rel. 05, Created)
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2; Mismatches
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569A29D69ACC6AC5 CRC64
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3.1.26.4)].
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POL_HV1U4
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Best Local S
Matches 13
                                                                                                     InterPro; IPR001584; Rve.
InterPro; IPR000477; RVTse.
Pfam; PF00552; Integrase; 1.
Pfam; PF00202; Integrase Zn; 1
Pfam; PF00075; rnaseH; 1.
Pfam; PF00065; rve; 1.
Pfam; PF00077; rvp; 1.
Pfam; PF000778; rvt; 1.
                                                                                                                                                                                                                                                                                                                          PROSITE; PS00141; ASP_PROTEASE; 1.
PROSITE; PS50175; ASP_PROT RETROV; 1.
PROSITE; PS50175; ASP_PROT RETROV; 1.
AIDS; Polyprotein; Hydrolase; Aspartyl protease; Endonuclease;
Nuclease; Transferase; RNA-directed DNA polymerase; 3D-structu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EW the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by and entitles requires a license agreement (See http://www.isb-s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    diversity from other HIV-1 isolates.";
AIDS Res. Hum. Retroviruses 6:1073-1078(1990)
-!- CATALYDIC ACTIVITY: Specific for a P1 res
and P1' variable, but often Pro.
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01-MAR-1992 (Rel. 21, Created)
01-MAR-1992 (Rel. 21, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin)
POL polyprotein [Contains: Protease (Retropepsin)
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P24740;
                                                                                                                                                                                                                                                                                 InterPro; IPR001995;
InterPro; IPR002156;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=11703;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Viruses;
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CATALYTIC ACTIVITY: N deoxynucleoside
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Transferase;
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g R.G., Roff M.,
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Integrase_Zn.
Pept_A_acid.
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[2]
3D-STRUCTURE MODELING OF PROTEASE DOMAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human immunodeficiency virus type 1 (BH: Viruses; Retroid viruses; Retroviridae;
                                                                                                                                                                                                                                                                                                                                                                             Norbeck D.W., Plattner J.J., Rittenhouse J.W., Turon M. Kohlbrenner W.E., Simmer R., Helfrich R., Paul D.A., Kr "Design, activity, and 2.8 A crystal structure of a C2 inhibitor complexed to HTV-1 protease."; Science 249:527-533(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=90341771; PubMed=22001ZZ;
Erickson J., Neidhart D.J., Vandrie J., Kempf D.J., Wang X.C.,
Norbeck D.W., Plattner J.J., Rittenhouse J.W., Turon M., Wideburg
Norbeck D.W., Plattner B. Helfrich R., Paul D.A., Knigge M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Lapatto R., Blundell T., Hemmings A., Overington J., Wilderspin J. Wood S., Merson J.R., Whittle P.J., Danley D.E., Geoghegan K.F., Hawrylik S.J., Lee S.E., Schelk K.G., Hobart P.M.; "X-ray analysis of HIV-1 proteinase at 2.7-A resolution confirms structural homology among retroviral enzymes."; Nature 342:299-302(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=89146134; PubMed=2537531
Weber I.T., Miller M., Jaskolski
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X-RAY CRYSTALLOGRAPHY (3.0 ANGSTROMS)
MEDLINE=93317673; PubMed=7687065;
Jacobo-Molina A., Ding J., Nanni R.G.
                                                                                                                                                                                        Matthews D.A.; "Crystal structure
                                                                                                                                                                                                                                                          Davies
                                                                                                                                                                                                                                                                                    MEDLINE=91188281; PubMed=1707186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             X-RAY CRYSTALLOGRAPHY (2
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No. 0.011;
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      Clark A.D.
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                                                                                                                                                                                                                                                             Jordan S.R.,
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PDB;

PDB;

1HVP; 9HVP; 1HRH; 2HMI;

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PDB;

EMBL; PIR; /

M15654; AAA44 A03965; GNVWH3

AAA44198.

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Tantillo C., Williams K.L., Famure - ...
Hughes S.H., Arnold E.;
"Crystal structure of human immunodeficiency viru
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Kohlstaedt L.A., Wang J., Friedman J.M.
"Crystal structure at 3.5-A resolution
complexed with an inhibitor.";
Science 256:1783-1790(1992).
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Hsiou Y., Ding J., Das K., Clark A.D. Jr., Hughes S.H.,
"Structure of unliganded HIV-1 reverse transcriptase at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rodgers D.W., Gamblin S.J., Harris B.A., Ray S., Hellmig B., Woolf D.J., Debouck C., Harrison S.C. "The structure of unliganded reverse transcriptas immunodeficiency virus type 1.";

Proc. Natl. Acad. Sci. U.S.A. 92:1222-1226(1995).
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MEDLINE=95166801; PubMed=7532306;
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MEDLINE=92311654; PubMed=1377403;
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CATALYTIC ACTIVITY:
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InterPro: IPR001995; Peptidase A2.
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InterPro: IPR00156; RWaseH.
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                                                                                                                                                                                                                                                                                                                                                                                                    07-FEB-01
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                                                                                                                                                                                                .001;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15-APR-98
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   Conservative
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                                                                                                                                                                                                          POL$BH102
                                                                                                                                                                                                                                             -MAR-97
                                                 rnaseH; rve; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -SEP-97
                                                                       Integrase_Zn;
                                                                                    integrase;
            42.9%;
 Score 72; DB 1;
Pred. No. 0.011;
1; Mismatches
                                                                       ۲
 0;
                       Length 1015;
  Indels
0
Gaps
0;
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PRESULT 14
POL SIVCZ
AC P17283;
DT O1-AUG-1990 (
DT 01-AUG-1990 (
DT 01-AUG-1990 (
DT 28-FEB-2003 (
POL D1/Prote
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GN POL.
CC CATALYTI(
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                                                                                                                                                                                                                                                              InterPro; IPR001584; Rve.
InterPro; IPR000477; RVTSe.
Pfam; PF00552; Integrase; 1.
Pfam; PF00202; Integrase Zn;
Pfam; PF00075; rraseH; 1.
Pfam; PF00065; rve; 1.
Pfam; PF00077; rvp; 1.
Pfam; PF00078; rvt; 1.
                                                                                                                                                              PROSITE; PS00141; ASP PROTEASE; 1.

PROSITE; PS50175; ASP PROT RETROV; 1.

AIDS; Polyprotein; Hydrolase; Aspartyl protease; En Nuclease; Transferase; RNA-directed DNA polymerase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIINE=90259077; PubMed=2188136;
Huet T., Cheynier R., Meyerhans A., Roelants G.,
"Genetic organization of a chimpanzee lentivirus
Nature 345:356-359(1990)
-!- CATALYTIC ACTIVITY: Endonucleolytic cleavage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         between the Swiss Institute of Bioinformat
the European Bioinformatics Institute. The
use by non-profit institutions as long
modified and this statement is not removed.
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01-AUG-1990 (Rel. 15, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin) (E
Reverse transcriptase (EC 2.7.7.49); Ribonuclease H
POL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001969; Aspprotease AS.
InterPro; IPR001037; Integrase C.
InterPro; IPR003308; Integrase Zn.
InterPro; IPR009007; Pept A acid.
InterPro; IPR001995; Peptidase A2.
InterPro; IPR002156; RNaseH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; X52154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboratic between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no we
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HSSP; P03366;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entities requires
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
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+ (DNA)(N)

MISCELLANEOUS: N-TERMINUS OF POL

TO A RIBOSOMAL FRAME SHIFT EVENT

TO A RIBOSOMAL FRAME SHIFT EVENT
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CATALYTIC ACTIVITY: N
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    l Similarity
13; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Retroid viruses;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QNPDIVIYOYMDDL
                                                                                                  105
1027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          equires a license agreement (S email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       immunodeficiency virus (SIV(cpz)) (CIV).
       Conservative
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rnaseH; 1.
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                        42.9%;
81.2%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Retroviridae; Lentivirus
                                                                                              PROTEASE.
BY SIMILARITY.
MW; C6D374E484:
  Score 72; DB Pred. No. 0.01
1; Mismatches
    1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                C6D374E484318EC1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1027
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BETWEEN GAG AND POL.
TO PEPTIDASE FAMILY A
                        DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A
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    2;
                                               Length 1027;
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related to F
    Indels
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H (EC 3.1.26.4)].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         γd
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a collaboration -
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  0,:
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HIV-1.";
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Gaps
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POL\_HV1ND

STANDARD;

PRT;

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POLL HYDE

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InterPro; IPR001999; Integrase C.

InterPro; IPR001307; Integrase C.

InterPro; IPR003308; Integrase Zn.

InterPro; IPR003308; Integrase Zn.

InterPro; IPR009007; Pept A acid.

InterPro; IPR001995; Peptidase A2.

InterPro; IPR002116; RNaseH.

InterPro; IPR002116; RNaseH.

InterPro; IPR002184; Rve.

InterPro; IPR00477; RVTse.

Pfam; PF00552; Integrase; 1.

Pfam; PF00552; Integrase Zn; 1.

Pfam; PF00665; rve; 1.

Pfam; PF00665; rve; 1.

Pfam; PF00665; rve; 1.

Pfam; PF00679; rvt; 1.
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01-NOV-1990 (Rel. 16, Created)
01-NOV-1990 (Rel. 16, Last sequence update)
01-NOV-1990 (Rel. 41, Last annotation update)
28-FEB-2003 (Rel. 41, Last annotation update)
POL polyprotein [Contains: Protease (Retropepsin) (EC 3.4.23.16);
Reverse transcriptase (EC 2.7.7.49); Ribonuclease H (EC 3.1.26.4)].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Spire B., Sire J., Zachar V., Rey F., Barre-Sinoussi F., Galibert F. Hampe A., Chermann J.C.; "Nucleotide sequence of HIVI-NDK: a highly cytopathic strain of the human immunodeficiency virus."; Gene 81:275-284(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human immunodeficiency virus type 1 (NDK isolate) (HIV-1). Viruses; Retroid viruses; Retroviridae; Lentivirus.
ACT SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; M27323; AAA44869.1; -. PIR; JQ0067; GNLJND.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
MEDLINE=90034200; PubMed=2806917;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI TaxID=11695;
                                                                                  PROSITE; PS00141, ASP PROTEASE; 1.

PROSITE; PS50175; ASP PROT RETROV; 1.

AIDS; Polyprotein; Hydrolase; Aspartyl protease; En Nuclease; Transferase; RNA-directed DNA polymerase.
                                                              CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MISCELLANEOUS: NDK, ISOLATED FROM A ZAIRIAN PATIENT AFFECTED WITH AIDS, AND IS A HIGHLY CYTOPATHOGENIC STRAIN. SIMILARITY: THE BROTEASE BELONGS TO PEPTIDASE FAMILY A2; ALSO KNOWN AS THE RETROPEPSIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATALYTIC ACTIVITY: Specific for a P1 residue that is and P1' variable, but often Pro.
CATALYTIC ACTIVITY: Endonucleolytic cleavage to 5'-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PTM:
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CATALYTIC ACTIVITY: N deoxynucleoside triphosphate = N diphosphate
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   AΑ;
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                                80
30 BY
113621 MW;
                                                              PROTEASE
                             SIMILARITY
   5ED866E8C9896CC1 CRC64;
                                                                                                                            Endonuclease;
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                                                Best
                                      Matches
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326 RKQNPEIVIYQYMDDL 341
           17 RGRNPDIVIYQYMDDL 32
                                     l Similarity 81.2
13; Conservative
                                             42.3%;
81.2%;
                                      Score 71; DB 1;
Pred. No. 0.015;
2; Mismatches
                                       1; Indels
                                                         Length 1002;
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Job time : 6.29508 secs Search completed: July 20, 2004, 06:31:01

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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
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Maximum DB seq length: 2000000000
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Perfect score:
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Copyright (c) 1993 - 2004 Compugen Ltd.
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

# SUMMARIES

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## ALIGNMENTS

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InterPro; IPRO0195; ASPPROLEASE AS. InterPro; IPRO0195; Peptidase AS. InterPro; IPR009007; Pept_A acīd. InterPro; IPR000477; RVTsē. Pfam; PF00077; rvp; 1. Pfam; PF00078; rvt; 1. PROSITE; PS00141; ASP_PROTEASE; 1.	16740; Fitransterase act 16508; Piproteolysis and 16278; PiRNA dependent I	G0:0008233; F:peptidase activity; II G0:0008233; F:RNA binding; IEA. G0:0003723; F:RNA-directed DNA polym	KNOWN AS THE RETROPEPSIN FAMILY.  L; AV002129; AAP92284.1;	Antimicrob. Agents Chemother. 44:2475-2484(2000)!- SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY A2; ALSO	Selected in	Bacheler L.T., Anton E., Kudish P., Baker D., Bunville J., Krakowski K., Bolling L., Aujay M., Wang X.V., Ellis D., Becker M.F., Lasut A.T., George H.T., Spalding D.R., Hollis G., Abromski K.,	SEQUENCE FROM N.A. STRAIN=682C03; MEDLINE=20408577; PubMed=10952598;	ID=11676;	Human immunodeficiency virus 1. Viruses; Retroid viruses; Retroviridae; Lentivirus.	(Fragment).	(TrEMBLrel. 16, (TrEMBLrel. 25,	(TrEMBLrel.	Q9EFP6 PRELIMINARY; PRT; 328 AA.	ILT 1 ?P6

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RESOLUTION 
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EMBL; AY002125; AAF92280.1; -.

GO; GO:0004190; F:aspartic-type endopeptidase activity; IEA.

GO; GO:0008233; F:peptidase activity; IEA.

GO; GO:0003723; F:RNA binding; IEA.

GO; GO:0003723; F:RNA-directed DNA polymerase activity; IEA.

GO; GO:0016740; F:transferase activity; IEA.

GO; GO:0016740; P:transferase activity; IEA.

GO; GO:0006508; P:proteolysis and peptidolysis; IEA.

GO; GO:0006508; P:RNA dependent DNA replication; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-20405577; PubMed-10952598;
Bacheler L. T., Anton E., Kudish P., Baker D., Bunville J.,
Backeler K. Bolling L., Aujay M., Wang X.V., Ellis D., E
Krakowski K., Bolling L., Aujay M., Wang X.V., Ellis D., E
Lasut A.L., George H.J., Spalding D.R., Hollis G., Abremsk
"Human Immunodeficiency Virus Type 1 Mutations Selected in
Failing Efavirenz Combination Therapy.";
Antimicrob. Agents Chemother. 44:2475-2464 (2000).

Antimicrob. Agents Chemother. 44:2475-2464 (2000).
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InterPro; IPR001995; Peptidase AZ.
InterPro; IPR009007; Pept A acid.
InterPro; IPR0000477; RVTse.
Pfam; PF00077; rvp; 1.
Pfam; PF00078; rvt; 1.
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01-MAR-2001
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PROSITE; PS50175; ASP_PROT_RETROV; 1.
Aspartyl protease; Hydrolase; Proteas
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Last annotation update)
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Pred. No.
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Pred. No. 0.00082;
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REVERSE TRANSCRIPTASE
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RA Bacheler L.T., Anton E., Kudish P., Baker D., Bunville J.,
RA Lasut A.L., George H.J., Spalding D.R., Hollis G., Abremski K.;
RA Lasut A.L., George H.J., Spalding D.R., Hollis G., Abremski K.;
RT Failing Efavirenz Combination Therapy.";
RT Failing Efavirenz Combination Therapy.";
RA Antimicrob. Agents Chemother. 44:2475-2484 (2000).
R. Antimicrob. Agents Chemother. 44:2475-2484 (2000).
R. ANTIARTY; THE PROTEASE BELONGS TO PEPTIDASE FAMILY A2; ALSO
CC KNOWN AS THE RETROPEPSIN FAMILY.

DR GO; GO:0004190; F:aspartic-type endopeptidase activity; IEA.
GO; GO:0004190; F:aspartic-type endopeptidase activity; IEA.
GO; GO:0003723; F:RNA binding; IEA.
GO; GO:0003723; F:RNA directed DNA polymerase activity; IEA.
GO; GO:0003723; F:RNA dependent DNA replication; IEA.
GO; GO:0006578; P:RNA dependent DNA replication; IEA.
GO; GO:0006278; P:RNA dependent DNA replication; IEA.
GO; GO:0006278; P:RNA dependent DNA replication; IEA.
GO; GO:0006778; P:RNA dependent DNA replication; IEA.
GO; GO:0016740; P:RNA depend
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                                      Viruses; Retroid
NCBI_TaxID=11676;
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  SEQUENCE FROM N.A.
                                                                                              Human immunodeficiency virus
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PS50175; ASP_PROT_RETROV; 1.
protease; Hydrolase; Protease; RNA-directed DNA polymerase;
                                                                                                                                                                                                                                                                                                                                                                                                            RGRNPDIVIYQYMDDL 32
                                                                                                                                                                                                                                                                                                                                                                          RGKNPDIVIYQYMDDL 286
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                                                                      Retroviridae; Lentivirus
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Pred. No. 0.00082;
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Best Local S
Matches 15
X MEDILINE 20408577; PubMed=10952598;

Bacheler L.T., Anton E., Kudish P., Baker D., Bunvill

R Krakkowski K., Bolling L., Aujay M., Wang X.V., Ellis

Lasut A.L., George H.J., Spalding D.R., Hollis G., Al

"Human Immunodeficiency Virus Type 1 Mutations Select

Failing Efavirenz Combination Therapy.";

L Antimicrob. Agents Chemother 4:2475-2484 (2000).

-!- SIMILARITY: THE PROTEASE BELONGS TO BEPTIDASE FAN

KNOWN AS THE RETROPEDSIN FAMILY.

R EMBL, AVO02117; AAF92272.1; -.

R GO; GO:0004190; F:aspartic-type endopeptidase activity

GO; GO:0003723; F:RNA binding; IEA.

R GO; GO:0003723; F:RNA binding; IEA.

R GO; GO:0003723; F:RNA binding; IEA.

R GO; GO:0003723; F:RNA binding; IEA.
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R GO; GO:0004190; Fraspartic-type endopeptidase activity; IEA.

GO; GO:0008233; Freptidase activity; IEA.

R GO; GO:0003733; Fr.NA binding; IEA.

R GO; GO:0003964; Fr.NA-directed DNA polymerase activity; IEA.

R GO; GO:00016740; Fr.NA-directed DNA polymerase activity; IEA.

R GO; GO:0016740; Fr.NA-dependent DNA replication; IEA.

R GO; GO:0006508; Fr.NA dependent DNA replication; IEA.

R GO; GO:0006778; P.RNA dependent DNA replication; IEA.

R GO; GO:0006778; P.RNA dependent DNA replication; IEA.

R GO; GO:0006778; P.RNA dependent DNA replication; IEA.

R InterPro; IPR001965; Aepprotease AS.

R InterPro; IPR001967; Pept_A_acid.

R InterPro; IPR009007; Pept_A_acid.
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Viruses; Retroid viruses; Retroviridae; Lentivirus
NCBI_TaxID=11676;
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01-OCT-2003
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01-MAR-2001
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Antimicrob. Agents Chemother. 44:2475-2484 (2000).
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MEDLINE=20408577; PubMed=10952598;
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00078; rvt; 1.
PS00141; ASP_PROTEASE; 1.
PS50175; ASP_PROT_RETROV;
protease; Hydrolase; Prote
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Pred. No.
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                                                                                                                                                                                                                                                                                                                                                   Baker D., Bunville J.,
Wang X.V., Ellis D., Becker M.F.,
R., Hollis G., Abremski K.;
1 Mutations Selected in Patients
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                                    activity;
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Best Local S
Matches 15
                                                                                 InterPro; IPR001969; Aspprotease AS.
InterPro; IPR001995; Peptidase A2.
InterPro; IPR009907; Pept A. acid.
InterPro; IPR000477; RVTse.
Pfam; PF00079; rvt; 1.
Pfam; PF00078; rvt; 1.
PROSITE; PS00141; ASP_PROTEASE; 1.
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GO; GO:0004190; F:aspartic-type endopeptidase activity;

GO; GO:0008233; F:peptidase activity; IEA.

GO; GO:0008233; F:RNA binding; IEA.

GO; GO:0003723; F:RNA-directed DNA polymerase activity;

GO; GO:0003964; F:RNA-directed DNA polymerase activity;

GO; GO:0016740; F:transferase activity; IEA.

GO; GO:0006508; P:proteolysis and peptidolysis; IEA.

GO; GO:0006278; P:RNA dependent DNA replication; IEA.
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NON_TER
SEQUENCE
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Antimicrob. Agents Chemother. 44:2475-2484 (2000).

-! SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY A KNOWN AS THE RETROPEPSIN FAMILY.
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NON TER
CHAIN
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Viruses; Retroid viruses; Ret
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01-MAR-2001
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Pfam; PF00
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01-OCT-2003
                                      NON TER
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                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
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InterPro;
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GO:0006278; P:RNA dependent DNA replication; IEA
:erPro; IPR001969; Aspprotease AS.
:erPro; IPR001995; Peptidase AZ.
:erPro; IPR009007; Pept_A_acid.
:erPro; IPR0090477; RVIse.
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PF00078; rvt;
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PS50175; ASP_PROT_RETROV; 1.
protease; Hydrolase; Protease; RNA-directed DNA polymerase;
                                                           protease; Hydrolase; Protease;
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Pred. No.
            REVERSE TRANSCRIPTASE
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                                                           polymerase;
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GO; GO:0008233; F:peptidase activity;
GO; GO:0003723; F:RNA-binding; IEA.
GO; GO:0003724; F:RNA-directed DNA pol.
GO; GO:0016740; F:transferase activity
GO; GO:0006508; P:proteolysis and pepti
GO; GO:0006278; P:RNA dependent DNA re:
InterPro; IPR001969; Aspprotease AS.
InterPro; IPR001995; Peptidase AZ.
InterPro; IPR009907; Peptidase AZ.
InterPro; IPR009077; RVTse.
Q9EFN3;
Q9EFN3;
01-MAR-2001
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Aspartyl
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Bacheler L.T., Anton E., Kudish P., Baker D., Bunville J.,
Krakowski K., Bolling L., Aujay M., Wang X.V., Ellis D., Becker M.F.,
Lasut A.L., George H.J., Spalding D.R., Hollis G., Abremski K.;
"Human Immunodeficiency Virus Type 1 Mutations Selected in Patients
Failing Efavirenz Combination Therapy.";
Antinicrob. Agents Chemother. 44:2475-2484 (2000).
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Human immunodeficiency virus 1.
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01-MAR-2001
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                                                                                                                                                                                                                                                                                                                                                                                                     PROSITE;
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SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY A2;

KNOWN AS THE RETROPEPSIN FAMILY.

LI, AV002137, AAF902292.1; -.

GO:0004190; F:aspartic-type endopeptidase activity; IEA.

GO:0008233; F:peptidase activity; IEA.

GO:0008233; F:RNA-directed DNA polymerase activity; IEA.

GO:0003723; F:RNA-directed DNA polymerase activity; IEA.

GO:0016740; F:transferase activity; IEA.

GO:0016740; F:RNA-directed DNA replication; IEA.

GO:0006278; P:RNA dependent DNA replication; IEA.
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PS50175; ASP_PROT_RETROV; 1.
protease; Hydrolase; Proteas
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 (TrEMBLrel. 16,
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                                    PRELIMINARY;
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Pred. No.
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L; Mismatches
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Pred. No.
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                                    328 AA.
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Query Match
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HSSP; P03369; 1CPI.
GO; GO:0004190; F:aspartic-type endopeptidase ac GO; GO:0004190; F:asparticase activity; IEA.
GO; GO:0008233; F:peptidase activity; IEA.
GO; GO:0003723; F:RNA-directed DNA polymerase ac GO; GO:0003723; F:transferase activity; IEA.
GO; GO:0016740; F:transferase activity; IEA.
GO; GO:0006508; P:proteolysis and peptidolysis;
GO; GO:0006278; P:RNA dependent DNA replication;
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Bacheler L.T., Anton E., Kudish P., Baker D., Bunville J.,
Backeler L.T., Anton E., Kudish M., Wang X.V., Ellis D., Becker M.F.,
Krakowski K., Bolling L., Aujay M., Wang X.V., Ellis G., Abremski K.;
Lasut A.L., George H.J., Spalding D.R., Hollis G., Abremski K.;
"Human Immunodeficiency Virus Type 1 Mutations Selected in Patients
Failing Efavirenz Combination Therapy.";
Antimicrob. Agents Chemother. 44:2475-2484 (2000).
1- SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY A2; ALSO
KNOWN AS THE RETROPEPSIN FAMILY.
EMBL; AY002142; AAF92297.1; -.
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NCBI_TaxID=11676;
MEDLINE=20408577; PubMed=10952598; Bacheler L.T., Anton E., Kudish P., Baker D., Bunville J., Backer M.F. Krakowski K., Bolling L., Aujay M., Wang X.V., Ellis D., Becker M.F. Lasut A.L., George H.J., Spalding D.R., Hollis G., Abremski K.; "Human Immunodeficiency Virus Type 1 Mutations Selected in Patients
                                                                                                                                                         Human immunodeficiency virus Viruses; Retroid viruses; Ret NCBI_TaxID=11676;
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InterPro; IPR001995; Peptidase_AZ.
InterPro; IPR009007; Pept_A_acid.
InterPro; IPR000477; RVTse.
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01-OCT-2003
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01-OCT-2003
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01-MAR-2001
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PS50175; ASP_PROT_RETROV; 1.
protease; Hydrolase; Protease;
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328 AA; 37281
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Pred. No. (
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GO; GO:000
EMBL; AYOUZ118; AAF922931;

GO; GO:0004190; F:aspartic-type endopeptidase activity; IEA.
GO; GO:000823; F:peptidase activity; IEA.
GO; GO:0003733; F:PAN binding; IEA.
GO; GO:0003732; F:RNA binding; IEA.
GO; GO:0003732; F:RNA binding; IEA.
GO; GO:0016740; F:transferase activity; IEA.
GO; GO:0016508; F:Proteolysis and peptidolysis; IEA.
GO; GO:0006578; F:RNA dependent DNA replication; IEA.
GO; GO:0006278; F:RNA dependent DNA replication; IEA.
InterPro; IPR001965; Aspprotease AS.
InterPro; IPR00197; Peptidase AS.
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01-MAR-2001
01-MAR-2001
01-OCT-2003
       InterPro;
InterPro;
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Antimicrob. Agents Chemother. 44:2475-2484 (2000).

1- SIMILARITY: THE PROTEASE BELOWGS TO PEPTIDASE FAMILY A2; AL. KNOWN AS THE RETROPEPSIN FAMILY.
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NON TER
SEQUENCE
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PROSITE; PS50175; ASP_PROT_RETROV; 1.
Aspartyl protease; Hydrolase; Protease; RNA-directed DNA polymerase;
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InterPro; IPR001995; Peptidase AZ.
InterPro; IPR009007; Pept A acid.
InterPro; IPR000477; RVIse.
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Antimicrob. Agents Chemother. 44:2475-2484(2000).
-!- SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY A2;
KNOWN AS THE RETROPEPSIN FAMILY.
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(TrEMBLrel. 25, Last annotation update)
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KNOWN AS THE RETROPEPSIN FAMILY.

REMBL; AX002131; AAF92286.1; --

REGO; GO:0004190; F:aspartic-type endopeptidase activity; IEA

RGO; GO:0009723; F:RNA binding; IEA.

RGO; GO:0003723; F:RNA binding; IEA.

RGO; GO:0003764; F:RNA-directed DNA polymerase activity; IEA.

RGO; GO:0003780; F:transferase activity; IEA.

RGO; GO:000578; P:proteolysis and peptidolysis; IEA.

RGO; GO:0006278; P:RNA dependent DNA replication; IEA.

R InterPro; IPR001969; Aspprotease AS.

R InterPro; IPR001995; Peptidase AS.

R InterPro; IPR001995; Peptidase AS.

R InterPro; IPR001997; RVTSe.

R InterPro; IPR001997; RVTSe.
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Best Local
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MEDLINE-2040857; PubMed=10952598;
Bacheler L.T., Anton E., Kudish P., Baker D., Bunville J., Becker M.F.,
Krakowski K., Bolling L., Aujay M., Wang X.V., Ellis D., Becker M.F.,
Lasut A.L., George H.J., Spalding D.R., Hollis G., Abremski K.;
"Human Imminodeficiency Virus Type 1 Mutations Selected in Patients
Pailing Efavirenz Combination Therapy.";
Antimicrob. Agents Chemother. 44:2475-2484(2000).

Antimicrob. Agents Chemother. 44:2475-2484(2000).
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Viruses; Retroid viruses; Retroviridae; Lentivirus
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PROSITE; PS50175; ASP_PROT_RETROV; 1.
Aspartyl protease; Hydrolase; Protease; RNA-directed DNA polymerase;
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Pfam; PF00078; rvt; 1.
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271

RGRNPDIVIYQYMDDL

286

32

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RESULT 13
Q9EFQ1
ID Q9EFQ
AC Q9EFQ
DT 01-M2
DT 01-O2
DE PO1 II
OS Human
OC Virus
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                                                                                                                                                                                                                           Query Match
Best Local &
                                                                                                                                                                                                                   Matches
                                                 Q9EFQ1;
Q9EFQ1;
01-MAR-2001
01-MAR-2001
01-OCT-2003
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; AY002121; AAF92276.1;
GO; GO:0004190; F:aspartic-type endopeptidase activity;
GO; GO:0008233; F:peptidase activity; IEA.
GO; GO:0008233; F:RNA binding; IEA.
GO; GO:0003733; F:RNA-directed DNA polymerase activity;
GO; GO:0003564; F:RNA-directed DNA polymerase activity;
GO; GO:0016740; F:transferase activity; IEA.
GO; GO:0016508; P:proteolysis and peptidolysis; IEA.
GO; GO:0006508; P:RNA dependent DNA replication; IEA.
                                                                                                                                                                                                                                                                  CHAIN
NON TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR001969; Aspprotease_AS.
InterPro; IPR001995; Peptidase_A2.
InterPro; IPR0019077; Pept_A_acid.
InterPro; IPR000477; RVTse.
Pfam; PF00077; rvp; 1.
Pfam; PF00078; rvt; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacheler L.T., Anton E., Kudish P., Baker D., Bunville J., Krakowski K., Bolling L., Aujay M., Wang X.V., Ellis D., Becker M.F. Krakowski K., Bolling L., Aujay M., Wang X.V., Ellis D., Becker M.F. Lasut A.L., George H.J., Spalding D.R., Hollis G., Abremski K.; "Human Immunodeficiency Virus Type 1 Mutations Selected in Patients "Human Immunodeficiency Virus Type 1 Mutations Selected in Patients Failing Efavirenz Combination Therapy."; Antimicrob. Agente Chemother. 44:2475-2484 (2000).
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Human immunodeficiency virus 1.
Viruses; Retroid viruses; Retroviridae; Lentivirus
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                                       protein
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                                                                                                                                                                                                                  L Similarity
                                                                                                                                                                                                                                                                                                                                          PS00141; ASP PROTEASE; 1.
PS50175; ASP PROT_RETROV; 1.
protease; Hydrolase; Protease;
                                                                                                                                                                 RGKNPDIVIYOYMDDL 286
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                                       (Fragment).
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Pred. No.
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                                                                                                                                                                                                                   Mismatches
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RESULT 14
Q9EFQ6
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X MEDLINE-20408577; PubMed=10952598;
A Bacheler L.T., Anton E., Kudish P., Baker D., Bunville J.,
A Bacheler L.T., Bolling L., Aujay M., Wang X.V., Ellis D., Becker
A Krakowski K., Bolling L., Aujay M., Wang X.V., Ellis D., Becker
A Lasut A.L., George H.J., Spalding D.R., Hollis G., Abremski K.;
T "Human Immundeficiency Virus Type 1 Mutations Selected in Pati
T Failing Efavirenz Combination Theyer 1 Mutations Selected in Pati
T Failing Efavirenz Combination Theyer 1 Mutations Selected in Pati
C Antimicrob. Agents Chemother. 44:2475-2494(2000).
L Antimicrob. Agents Chemother. 44:2475-2494(2000).
C -!- SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY A2; AL
KNOWN AS THE RETROPEESIN FAMILY.
R EMBL; AV002119; AAF92274.1; --
R EMBL; AV002119; AAF92274.1; --
R GO; GO:0004190; F:aspartic-type endopeptidase activity; IEA.
R GO; GO:0008233; F:peptidase activity; IEA.
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-i- SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY A2, FMMIL NORMA AS THE RETROPEPSIN FAMILY.
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GO: GO:0008233; F:RNA binding; IEA.
GO: GO:0003723; F:RNA-directed DNA polymerase activity: GO: GO:0003964; F:RNA-directed DNA polymerase activity: GO: GO:0016740; F:transferase activity; IEA.
GO: GO:0006508; P:protectysis and peptidolysis; IEA.
GO: GO:0006508; P:NNA dependent DNA replication; IEA.
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01-MAR-2001
01-MAR-2001
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NON TER
SEQUENCE
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Pfam; PF00078; rvt; 1.
PROSITE; PS00141; ASP_PROTEASE; 1.
PROSITE; PS50175; ASP_PROT_RETROV; 1.
Aspartyl protease; Hydrolase; Protease;
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Viruses; Retroid viruses; Retroviridae; Lentivirus
NCBI TaxID=11676;
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InterPro; IPR001995; Peptidase AZ.
InterPro; IPR009007; Pept A_acid.
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InterPro; IPR009007;
InterPro; IPR000477;
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328 AA; 37297 I
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Pred. No. 0.00082;
1; Mismatches 0;
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                                                                                                                         FAMILY A2;
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D., Becker M.F.,
remski K.;
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                                                                                                                                                                                                             Patients
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GO; GO: O00396+,

R GO; GO:0016740; F:tra...

DR GO; GO:0016740; F:proteolysis

DR GO; GO:0006508; P:RNA dependent DNA 1...

DR GO; GO:0006278; P:RNA dependent DNA 1...

DR InterPro; IPR001965; Aspprotease AS.

DR InterPro; IPR001995; Pept Aacīd.

InterPro; IPR000197; PvTse.

DR InterPro; IPR000477; RVTse.

DR Ffam; PF00078; rvt; 1.

Pfam; PF00078; rvt; 1.

Pfam; PF00078; ASP PROTEASE; 1.

"""Trolase; Prot
 RESULT
Q9EFR2
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Krakowski K., Bolling L., Aujay M., Wang X.V., Ellis D., Becker
UA Lasut A.L., George H.J., Spalding D.R., Hollis G., Abremski K.,
UT "Human Immunodeficiency Virus Type 1 Mutations Selected in Patis'
Trailing Efavirenz Combination Therapy.",
LANDER FAMILY THE PROTEASE BELONGS
C. I. SIMILARITY: THE PROTESSE BELONGS
C. KNOWN AS THE RETROPEPSIN FAMILY.
C. KNOWN AS THE RETROPEPSIN FAMILY.
C. KNOWN AS THE RETROPEPSIN FAMILY.
C. MOSCOURS S.; F. RAMADIAN, F
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                                                 PROSITE; PS00141; ASP_PROTEASE; 1.
PROSITE; PS50175; ASP_PROT_RETROV; 1.
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STRAIN=070G05;
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PROSITE; PS50175; ASP_PROT_RETROV; 1.
Aspartyl protease; Hydrolase; Protease; RNA-directed DNA polymerase;
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GO:0003964; F:RNA-directed DNA polymerase activit;
GO:0016740; F:transferase activity; IEA.
GO:0006508; P:proteolysis and peptidolysis; IEA.
GO:0006278; P:RNA dependent DNA replication; IEA.
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328 AA;
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37138 MW;
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F:RNA-directed DNA polymerase activity;
                         Hydrolase; Protease; RNA-directed DNA polymerase;
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16,
25,
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Last annotation update)
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REVERSE TRANSCRIPTASE.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 328 AA.
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                                                                                                                                                                                                                                                                                                                                                                      FAMILY A2; ALSO
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re greater than or equal to the score of the result being printed,
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189.400 Million cell updates/sec
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SUMMARIES
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Grow	VIH	VIΗ	CIL					PSMpep00	VIΗ			Aag81048 HIV prote			_			Aar62723 LHRH-cont	Aaull430 Synthetic

## RESULT 1 AAY53552 standard; protein; 28 æ

ALIGNMENTS

18-JAN-2000 AAY53552; (first entry)

Lipopeptide; epitope; cytotoxic T lymphocyte; CTL; lipid; spacer; electrical charge; hydrophilicity; vaccine; immune response; HIV; human immunodeficiency virus; hepatitis B virus; papilloma virus; Lipopeptide **#**3.

p53;

Synthetic. melanoma; malaria; parasite. Modified-site Homo sapiens. Location/Qualifiers note= "contains" palmitoyl ı the epsilon l residue on carbon attached at of the side the N-chain"

FR2776926-A1

terminus

and

on the

Aay53552 Lipopepti Aaw06132 Anti-chol

Description

Result

No

Score

Query Match

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AAY53552 AAW06132 AAW46447 AAY53551 AAB84738 AAW06131 ABB79182 AAW71642

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AAB98912 AAY82634 AAY49253 AAY49254 AAY49254 AAY492638 AAY92638 AAB69279

Aay49254 Aay49255 Aay82634 Aay49253

Anti-chol
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AAE04828 AAU96698 AAB69286 AAW06129 AAY02470

Aab69279
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Human imm
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Modified

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Aar83561 Aar65389

IgE CH4 r Universal

08-OCT-1999.

07-APR-1998; 07-APR-1998; 98FR-00004323. 98FR-00004323

(INRM ) INSERM INST NAT SANTE & RECH (CNRS ) CNRS CENT NAT RECH SCI. (INSP ) INST PASTEUR LILLE. MEDICALE

Le Gal FA, Guillet JG, Gahery SH, Gras Æ, Melnyk Ó Tartar

Þ

WPI; 1999-583113/50.

New lipopeptide containing lipid regions and two epitopes, all ser by peptide spacers that impart hydrophilicity, useful in vaccines separated

Example 1; Page 9; 35pp; French.

The invention relates to the generation of a lipopeptide comprising at least one auxiliary T epitope, at least one cytotoxic T lymphocyte (CTL epitope and at least one lipid residue with (i) the epitopes and lipid portion and (ii) the epitopes, being separated independently by peptide

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RESULT 2
AAWOG132
ID AAWO
XX AAWO
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AX Chol
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07-FEB-1997
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Anti-cholesteryl
                                                                                                    Cholesteryl ester transfer protein B cell epitope linked to T celepitope - used to generate vaccine to regulate CETP activity for decreasing the risk of developing a cardiovascular disease e.g.
                                                                                                                                                                                                                                                                                                                                                      01-MAY-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Region
                              Disclosure;
                                                                               atherosclerosis.
                                                                                                                                                                                                         ; IAM
                                                                                                                                                                                                         1996-506103/50
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                                                                                                                                                                                                                                                                                                     CELL
                                                                                                                                                                                                                                                    CM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ester transfer protein; CETP; antigen; vaccine;
lar disease; atherosclerosis.
                         Page
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                                                                                                                                                                                                                                                                                                                                                                                                       96WO-US006147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /label= B-cell_epitope
/note= "B-cell epitope comprises the C-terminal
acids of rabbit CETP, involved in neutral lipid
or transfer activity"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rabbit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /label= B-cell_epitope
/note= "B-cell_epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tetanus toxoid protein"
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/note= "T-cell epitope comprises
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ester transfer multivalent vaccine peptide
                                                                                                                                                                                                                                                       Thomas LJ;
                              7;
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                         72pp;
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binding
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27-AUG-2003
18-MAY-1998
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cholesteryl ester transfer protein; CETP; cholesteryl ester; high density lipoprotein; HDL; very low density lipoprotein; HDL; hterosclerosis; neutral lipid binding; transfer activity; immunogenic; B cell epitope; antibody; DNA plasmid-based vaccine; broad range helper T cell epitope; treatment;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 50 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Clostridium tetani.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cardiovascular disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CETP B cell
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                                                                                                                DNA plasmid-based vaccine encodes CETP B cell and helper T cell epitope(s) - used for elevating high density lipoprotein levels, treating cardiovascular disease.
                                                                                                                                                                                                               WPI; 1997-549731/50.
N-PSDB; AAV05128.
                                                                                                                                                                                                                                                                                                                                                                              01-MAY-1996;
21-FEB-1997;
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                                                                                                                                                                                                                                                                                      Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO9741227-A1
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                                                                      Claim
                                                                                                                                                                                                                                                                                                                                  (TCEL-) T CELL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                      8; Page 22;
                                                                                                                                                                                                                                                                                      IJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QYIKANSKFIGITERGRNPD---IVIYQYMDDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OYIKANSKFIGITERFPRPDGREAVAYRFEEDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ďs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        epitope/tetanas toxoid construct for a plasmid vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (revised)
(revised)
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                 96US-00640713.
97US-00802967.
                                                                                                                                                                                                                                                                                                                                  SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                     97WO-US007294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'note=
                                                                      67pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   55.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "tetanas toxoid broad range helper T cell epitope"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "CETP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "CETP epitope of amino acids 481-496 of AAW46445"
                                                                      English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              chimeric.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 92.5;
Pred. No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     epitope of amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5; DB 2;
1.4e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ω
4
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             350-368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of
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pes_of rabbit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                  for
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The present sequence represents a construct epitope from the toxoid teatus protein, and

containing 2 B cell e

ng a helper epitopes of

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RESULT 4
AAY53551
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CC and vice versa. An increased CETP activity produces an atherogenic

CL lipoprotein profile and induces atherosclerosis. A 13 amino acid stretch

CC in the rabbit CETP (ARM46445) (Phe483 to Leu495) is important for neutral

CC lipid binding and transfer activity. This region has been shown to be

CC immunogenic as a B cell epitope of CETP. A second B cell epitope is

CC defined by Arg350 to Ile368. Antibodies to this second epitope would

CC allow the formation of immune complexes involving CETP, and promote the

CC removal of the complexed CETP. The present sequence is encoded by a DNA

CC plasmid-based vaccine which comprises sequences encoding at least 1 B

CC cell epitope of CETP linked in frame with at least one segment encoding a

CC broad range helper T cell epitope. The vaccines can be used to elevate

CC the ratio of circulating HDL to circulating LDL, VLDL or total

CC cholesterol in a human. It can also be used for decreasing the level of

centi-CETP antibodies in vivo and for treating cardiovascular disease.

CC Updated on 27-AUG-2003 to correct OS field.) (Updated on 17-OCT-2003 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                    (INRM )
New lipopeptide containing lipid regions and two epitopes, all sep
by peptide spacers that impart hydrophilicity, useful in vaccines
                                                                             WPI; 1999-583113/50
                                                                                                                           Le Gal FA,
                                                                                                                                                                                                                                                                            07-APR-1998;
                                                                                                                                                                                                                                                                                                                          07-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                              08-OCT-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                               FR2776926-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Lipopeptide; epitope; cytotoxic T lymphocyte; CTL; lipid; spacer; electrical charge; hydrophilicity; vaccine; immune response; HIV; human immunodeficiency virus; hepatitis B virus; papilloma virus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18-JAN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY53551 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            melanoma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Lipopeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mature cholesteryl ester transfer protein (CETP). CETPs mediate transfer of cholesteryl esters from high density lipoprotein (HI very low density lipoprotein (VLDL) and low density lipoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               standardise
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                                                                                                                                                                                                 INSERM INST NAT SANTE & RECH MEDICALE CURS CENT NAT RECH SCI.
                                                                                                                                                                            INST PASTEUR LILLE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QYIKANSKFIGITERFPRPDGREAVAYRFEEDI 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QYIKANSKFIGITERGRNPD---IVIYQYMDDL 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          malaria; parasite.
                                                                                                                         Guillet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                            98FR-00004323.
                                                                                                                                                                                                                                                                                                                          98FR-00004323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             terminus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note= "contains palmitoyl residue attached at the N-terminus and on the epsilon carbon of the side chain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein;
                                                                                                                         'n,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   55.1%;
                                                                                                                         Gahery
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 92.5; D
Pred. No. 1.4e
4; Mismatches
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                                                                                                                         SH,
                                                                                                                      Gras MH,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6,
                                                                                                                      Melnyk O,
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                                                                                                                      Tartar
                       all separated
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        р53;
нвv;
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The present sequence represents a lipid-tailed protein. The lipid moiety is able to cross the mucosal membrane, and deliver an antigen to the immune system. The lipoprotein is administered to a mucosal membrane to

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RESULT 5
AAB84738
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention relates to the generation of a lipopeptide comprising at least one auxiliary T epitope, at least one cytotoxic T lymphocyte (CTL) epitope and at least one lipid residue with (i) the epitopes and lipid portion and (ii) the epitopes, being separated independently by peptide spacers. These spacers comprise sequences of amino acids which carry an overall electrical charge in neutral media to ensure that the lipopeptide is hydrophilic. This peptide represents an example of them lipopeptide is hydrophilic. It contains 2 lipid residues attached at the N-terminal end of the molecule and 2 epitopes separated by the spacer residues Serser and Ala-Ala-Pala-Ala. Peptides AAY53301-Y53549 represent peptide epitopes used in the generation of the lipopeptides. These are used in therapeutic or prophylactic compositions and vaccines to induce specific immune responses against human immunodeficiency, heparities B or papilloma viruses; p53 of melanoma or the malaria parasite
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Lipid-tailed protein; mucosal membrane; immune system; lipoprotein; B cell response; T cell response; intranasal immunisation; sublingual immunisation.
                                                        Claim
                                                                               Inducing systemic immune response comprises mucosal administration of lipid-tailed proteins or lipopeptide in absence of adjuvants.
                                                                                                                                                          Druilhe P,
                                                                                                                                                                                     (INSP )
                                                                                                                                                                                                                                  09-DEC-1999;
                                                                                                                                                                                                                                                          08-DEC-2000; 2000WO-EP012794
                                                                                                                                                                                                                                                                                                                                                                                                                           Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAB84738 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 29 AA;
                                                                                                                             WPI; 2001-451597/48.
                                                                                                                                                                                                                                                                                            14-JUN-2001.
                                                                                                                                                                                                                                                                                                                       WO200141797-A2
                                                                                                                                                                                                                                                                                                                                                                                  Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17-SEP-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 1; Page 9; 35pp; French.
                                                   22; Page 26; 34pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          w
                                                                                                                                                                                    INST PASTEUR.
UNIV LILLE 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QYIKANSKFIGITERGRNPDIVI 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QYIKANSKFIGITERGRAAGIGI 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sequence of lipopeptide Nh2-K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                        Gras-Masse
                                                                                                                                                                                                                                  99US-0169952P
                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                              /note= "amidated residue with palmitoyl lipid residue with 16 carbon atoms attached via an epsilon bond"
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                                                                                                                                                        Benmohamed
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 87; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
.2e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
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RESULT 6
ADAW06131
ID ADAW06131
XX ADAW06131
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Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sublingual immunization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cardiovascular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cholesteryl ester transfer protein; CETP; antigen; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Anti-cholesteryl ester transfer multivalent vaccine peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAW06131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW06131 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              induce an immune response. The lipoprotein induces a B cell and/or a cell response. The lipoprotein is used to provide intranasal or
  A multivalent vaccine comprises an immunogenic helper T-cell epitope of tetanus toxoid protein covalently linked to the B-cell epitopes of human cholesteryl ester transfer protein (CETP) (see also AAW66127). The vaccine elicits an immune response against endogenous CETP activity, and
                                                                                                                                                                                      Cholesteryl ester transfer protein B cell epitope linked to T cell epitope - used to generate vaccine to regulate CETP activity for decreasing the risk of developing a cardiovascular disease e.g.
                                                                                                                                                                                                                                                                                         WPI;
                                                                                                                                                                                                                                                                                                                                        Rittershaus CW,
                                                                                                                                                                                                                                                                                                                                                                                                                                   01-MAY-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-MAY-1996;
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                                                                                                                      Page 7;
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/note= "B-cell epitope comprises the C-terminal 16 amino
acids of human CETP, involved in neutral lipid binding o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         transfer activity"
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/note= "B-cell_epitope comprises
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                                                    vaccine (III) against human CMV comprises antigen presenting cells which present (I); (3) a recombinant viral vector (IV) which contains a gene encoding (I); and (4) an immunological reagent (V) which comprises (I). (I) has virucide activity. (II) or (III) are useful for modulating the immune response to HCMV infection, and for vaccinating a mammal in need of it against HCMV. (I) is useful for elliciting a cellular immune against HCMV by normal and immunodeficient subjects, for creating efficient vaccines against HCMV, and in immunological methods to detect PPISO-reactive CTL in a patient or a sample from the patient. The present sequence represents a HCMV PPISO related vaccine peptide, which is given in the exemplification of the present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                   The present invention describes a peptide (I) which is an immunogenic epitope recognised by CD8+ class I major histocompatibility complex (MHC) restricted cytotoxic T-lymphocytes (CTI) of patients harbouring latent cytomegalovirus (HCMV) infection. Also described are: (1) a vaccine (II) against human cytomegalovirus (CMV), which comprises (I); (2) a cellular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              02-MAY-2002
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human cytomegalovirus PP150 related vaccine peptide
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; Page 14; 28pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cytomegalovirus infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New immunoreactive peptide cytotoxic T-lymphocytes epitope of human cytomegalovirus PP150, useful for creating vaccines against
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2002-471432/50.
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                                                                                                                                      This polypeptide comprises the POL and nEF epitopes of HIV-1. It is CC encoded by vCP1433 (see AAV58243). In vCP1433, an HIV pol/nef 'string of CC beads' cassette is placed under control of the vaccinia H6 promoter. CC pMCCH6K2B3, containing a vaccinia H6/K3L expression cassette and CC vaccinia E3L gene with endogenous promoter flanked by the ALVAC C6 insertion site sequences, was used in recombination with vCP1433 to obtain vCP1425 (see AAV58244-45). K3L and E3L are vaccinia virus CC vectors, include K3L and/or E3L and are used for enhancing expression of CC gene products that they encode. The translation factors can effect CC inhibition of elf-2alpha phosphorylation or inhibition of protein kinase CC increasing the effective concentration of ds RAA. The up-regulation of forealph gene expression can have a profound effect on the induction of a conculated with recombinants derived from these new vectors. (Updated on 17-norm-non to termal-arian of field)
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ID AAW7
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                                                        Matches
                                                                   Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                             Enhancing expression of nucleic acids in cells - by using modified vectors which comprise the nucleic acid and also nucleic acid encover
                                                                                                                                                                                                                                                                                                                                                                          Example 1; Fig 4A-C; 90pp; English
                                                                                                                                                                                                                                                                                                                                                                                                       translation factor
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tartaglia J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (VIRO-) VIROGENETICS CORP. (UYAR-) UNIV ARIZONA STATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12-MAR-1997;
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                                                                                                                                   17-OCT-2003 to standardise
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; HIV; pol; nef; epitope.
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EYFK-NCKLMAIFQSSMTKILEPFRKQNPDIVIYQYMDDL
                             QYIKANSKFIGITE---
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(first entry)
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                                                               46.7%;
47.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Goebel
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                                                     4
                                                 Score 78.5; DB 2
Pred. No. 0.0017;
4; Mismatches
                                                                                                                                  field)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SJ,
                        RGRNPDIVIYOYMDDL 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cox WI,
                                                                            DB 2;
                                                   6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gettig RR,
                                                                          Length
 119
                                                   Indels
                                                                            . 280;
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                                                   11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pincus SE;
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                                                   Gaps
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AAW71363
ID AAW7
                                                                                                                                                         cc insertion site sequences, was used in recombination with vCP1433 to cobtain vCP1452 (see AAV60252-53). X3L and B3L are vaccinia virus CC translation factors. New vectors are provided for enhanced expression of CC at least 1 first nucleic acid molecule (NAM) in a cell having a CC particular phenotype. The vector (e.g. NYVAC or ALVAC) is modified to CC comprise the first NAM and at least 1 second NAM encoding a transcription CC factor (TP), or a TF and a translation factor such as K3L and B3L, where CC there is co-temporal expression of the first and second NAMs with respect CC to the phenotype of the cell, and where expression of the second NAM (CC enhances expression of the first NAM by enhancing transcription or CC transcription and translation. Also claimed is a method for increasing consession of at least 1 first NAM by such a vector. The vectors can be CC used for increasing expression of e.g. an epitope of interest, a CC therapeutic gene or a fusion protein. (Updated on 17-OCT-2003 to constand translation protein. (Updated on 17-OCT-2003 to constand translation protein.)
                                                                     Matches
                                                                                     Best Local
                                                                                                   Query Match
                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                     This polypeptide comprises the POL and NEF epitopes of HIV-1. It is encoded by vCP1433 (see AAV60251). In vCP1433, an HIV pol/nef 'string beads' cassette is placed under control of the vaccinia H6 promoter pMPC6H6K3E3, containing a vaccinia H6/K3L expression cassette and vaccinia E3L gene with endogenous promoter flanked by the ALVAC C6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Enhancing expression of nucleic acids in cells - by using vectors which comprise nucleic acid and also nucleic acid transcription factor and optionally translation factor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Example 2; Fig 6; 102pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N-PSDB; AAV60251.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tartaglia J,
Pincus SE;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (VIRO-) VIROGENETICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12-MAR-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Vector; gene therapy; vaccine; ALVAC; vCP1433; HIV; POL; NEF; epitope.
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                                     w
                                                                                     Similarity
                                                                                                                                     280
EYFK-NCKLMAIFQSSMTKILEPFRKQNPDIVIYQYMDDL 119
                                     QYIKANSKFIGITE---
                                                                     Conservative
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(first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     97US-00816155
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                                                                                    46.7%;
47.5%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       optionally translation factor.
                                                                                  Score 78.5;
Pred. No. 0
                         ----RGRNPDIVIYQYMDDL 32
                                                                   Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 K3L;
                                                                                  .0017;
                                                                                                DB 2;
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                                                                                                Length 280;
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                                                                Gaps
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RESULT 10 AAB98912

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The invention relates to a method for permitting the cessation of CC antiviral therapy in HIV-infected patients undergoing antiviral therapy CC who have a controlled level of viraemia. The method involves CC administration of nucleic-acid based vaccines encoding HIV-specific CC immunogens to the patient, enabling the expression of the HIV-specific CC immunogens in the patient, enabling the HIV-specific antigens are CC presented on major histocompatibility complex (MHC) class I and II CC molecules, stimulating an HIV-specific CD8+ and CD4+ response. The method CC permits the cessation of antiviral therapy on HIV-infected patients CC either without virus rebound, with a delayed rebound, or with decreased CC post-rebound set point, in addition to achieving immunological control of CC persistent infectious virus after discontinuation of antiviral therapy. CC The method is useful for people who have lost their CD4+ and/or CD8+ T CC cell responses to HIV antigens, such as those who have lost their CD8+ T CC proliferative T cell responses to spi20 or p24. The method is specifically useful for treating persons infected with a lymphotropic or CC immune-destroying retroviral infection, or for treating HIV-infected patients undergoing anti-retroviral therapy and having a viral load of cell count of above 300 cells/ml, preferably 500 cells/ml. The present CC sequence represents a synthetic protein comprising N - to C-terminally, the HIV-specific cytotoxic T-lymphocyte (CTI) epitopes Pol-3 (AAB98913), CC Nef-2 (AAB98914), Pol-2 (AAB98915), Nef-1 (AAB98916) and Pol-1 (AAB98917)
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by administering
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Permitting
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AARON DIAMOND AIDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AVENTIS PASTEUR SA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HIV-derived Pol-Nef
                                                                                                                                                                                                                                                                                                                                                                                                                                                       cessation of antiviral therapy on HIV-infected patients antiviral therapy, useful for treating HIV-infected patients, tering nucleic acid based vaccines encoding HIV-specific
                                                                                                                                                                                                                                                                                                                                                                                                      Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                      12; 57pp;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        note= "Pol-1 CTL epitope (AAB98917)"
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--= "Nef-1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .280
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                                                                                                                                                                                                                                                                                                                                                                                                      English.
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                                                                        CC treatment of allergic more compound comprises at least one allergen cC antigenic determinant (i) recognised by a B cell or an antibody secreted by a B cell of a non-atopic individual and at least one antigenic cC determinant (ii) different from the allergen that triggers T cell activation. (I) has antiallergic, antiasthmatic, antinflammatory. CC determinant (iii) different from the allergen that triggers T cell cc. (I) may be used in a pharmaceutical or cosmetic medicament to creat and/or prevent allergies or a disease of allergic origin, and cc. (I) may be used in a pharmaceutical or cosmetic medicament to creat and/or prevent allergies or a disease of allergic origin, and cc. (I) may be used in a pharmaceutical or cosmetic medicament to creat and/or prevent allergies or a disease of allergic origin, cc. (C especially hypersensitivities. These include rhinitis, sinusitis, cc. (C expecially hypersensitivities and/or a mixture of these. The case of (I) in the treatment of allergic conditions avoids the need for cast described with those of the case of the conditions avoids the need for the cast ment. The component of the conditions are their causes and conditions are their causes. Place of the conditions are their causes.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   T cell epitope; B cell epitope; allergy; allergen; antigenic; antiallergic; antiasthmatic; antiinflammatory; dermatological; immunosuppressive; vaccine; rhinitis; sinusitis; bronchial asthma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAY82634 standard; peptide; 137 AA
                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 8; Page 35; 50pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        one antigenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2000-422470/36
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30-JUL-1998;
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art drug therapies alleviate symptoms, but do not influence their however (I) actually combats the cause of an allergic reaction. The present sequence represents a specifically claimed compound peptic sequence from the present invention
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                    compound for prevention and treatment of allergies comprises at least allergen antigenic determinant recognized by a B cell and at least antigenic determinant which does not trigger T cell activation.
                                                                                                                                                                                                                                                                                                                                                                                          present invention describes a compound (I) for the prevention and/or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 81
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Pred. No. 0.0017;
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RESULT 12
AAY49253
AD AAY49253
AC AAY49
XX AAY49253
AC AAY49
XX O7-FE
XX Carri
KW Carri
KW encap
XX Syntl
PN W099:
XX 27-AI
XX 27-AI
XX 27-AI
XX WPI;
DR WPI;
DR WPI;
DR WPI;
DR WPI;
DR WPI;
DR WPI;
CC Carr
PT Carr
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                                                                                                                                                                              Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                 The invention provides carrier proteins comprising at least 5 CD4+ T cell epitope. The carrier protein comprises at least 1 of N6, N10 or N19. The carrier protein can be prepared by expressing a vector comprising a mucleic acid molecule encoding the protein, in a host cell and recovering the expressed protein. The carrier protein can also be produced by (a) constructing oligonucleotide molecules that encode peptide epitopes; (b) annealing the oligonucleotides to form duplexes; (c) introducing the duplexes into an expression vector; (d) introducing the expression vector culture of the host cell; and (e) isolating the fusion protein produced from a protective immunogen in the control of diseases caused by encapsulated by control of the carrier protein can be used as a protective immunogen in the control of diseases caused by encapsulated by carrier many control of the carrier protein can be used as a protective immunogen in the control of diseases caused by encapsulated by carrier many carrier protein can be used as a protective many carrier protein can be used as a protective many carrier protein can be used as a protective many carrier protein can be used as a protective many carrier protein can be used as a protective many carrier protein can be used as a protective many carrier protein can be used as a protective many carrier protein 
                                                                                                                                                                                                                                                                                                                                         bacteria. The present sequence represents the amino polyepitope carrier protein construct
                                                                                                                                                                                                                                                                                     Sequence 218 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Carrier proteins containing CD4+ epitopes useful for protecting against diseases caused by encapsulated bacteria.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Fig 2; 76pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2000-023325/02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rappuoli R, Grandi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         04-NOV-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Carrier protein; CD4+; T cell epitope; N6; N10; N19; immunogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N10 polyepitope carrier protein construct amino acid sequence.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (CHIR-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9955730-A2.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
       126
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                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAZ31415
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QYIKAQSKFIGITEKGGSP 144
                                        QYIKANSKFIGITERGRNP 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
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                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98GB-00008932
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                                                                                                                                                                   46.4%;
78.9%;
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                                                                                                                                         2;
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                                                                                                                                                               Score 78; DB 3;
Pred. No. 0.0015;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 78; DB 3;
Pred. No. 0.00085;
1; Mismatches 5
                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
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                                                                                                                                                                                                    Length 218;
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                                                                                                                                 Indels
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                                                                                                                                                                                                                                                                                                                                                                              acid sequence
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                                                                                                                             Gaps
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RESULT 13

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AAY49255
ID AAY4
XX
AC AAY4
AC AAY4
AC O7-F
XX
U7-F
XX
U8-N19
XX
KW Carr
KW enca
XX
OS Synt
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                                                                                                                                                                                        RESULT 14
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ID AAY4
                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 15; Conserv
                                                                                                                                                                                                                                                                                                                                                                     The invention provides carrier proteins comprising at least 5 CD4+ T cell epitope. The carrier protein comprises at least 1 of N6, N10 or N19. The carrier protein can be prepared by expressing a vector comprising a nucleic acid molecule encoding the protein, in a host cell and recovering the expressed protein. The carrier protein can also be produced by (a) constructing oligonuclectide molecules that encode peptide epitopes; (b) annealing the oligonuclectides to form duplexes; (c) introducing the duplexes into an expression vector; (d) introducing the expression vector into a host cell; and (e) isolating the fusion protein produced from a protective immunogen in the control of diseases caused by encapsulated bacteria. The present sequence represents the amino acid sequence of N11 polyepitope carrier protein construct
                           Carrier protein; CD4+; T cell epitope; N6; N10; N19; immunogen; encapsulated bacteria.
                                                                 NI9 polyepitope carrier protein construct amino acid sequence.
                                                                                                 07-FEB-2000
                                                                                                                                AAY49255;
                                                                                                                                                       AAY49255 standard; protein; 390 AA
                                                                                                                                                                                                                                                                                                                                                    Sequence 240 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Carrier proteins containing CD4+ epitopes useful for protecting against diseases caused by encapsulated bacteria.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Fig 7; 76pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-023325/02.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Carrier protein; CD4+; T cell epitope; N6; N10; N19; immunogen; N11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N11 polyepitope carrier protein construct amino acid sequence.
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                                                                                                                                                                                                                                 126 QYIKAQSKFIGITEKGGSP 144
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                                                                                                                                                                                                                                                        QYIKANSKFIGITERGRNP 21
                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Grandi
                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein; 240 AA
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                                                                                                                                                                                                                                                                                                      46.48;
                                                                                                                                                                                                                                                                                        2;
                                                                                                                                                                                                                                                                                                      Score 78; DB 3;
Pred. No. 0.0017;
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                                                                                                                                                                                                                                                                                        2;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention provides carrier proteins comprising at least 5 CD4+ T cell epitope. The carrier protein comprises at least 1 of N6, N10 or N19. The carrier protein can be prepared by expressing a vector comprising a nucleic acid molecule encoding the protein, in a host cell and recovering the expressed protein. The carrier protein can also be produced by (a) constructing oligonucleotide molecules that encode peptide epitopes; (b) annealing the oligonucleotides to form duplexes; (c) introducing the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO9955730-A2
                                                                                                                                                                                           Prostate specific membrane antigen; immunogenized construct; mutant; vaccination; cytotoxic T-lymphocyte immunity; breast cancer; prostate cancer; cell-associated peptide antigen; foreign epitope.
                                                                                                                                                                                                                                                   Mutant human prostate specific membrane antigen construct, hPSM3.1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       duplexes into an expression vector; (d) introducing the expression vector into a host cell; and (e) isolating the fusion protein produced from a culture of the host cells. The carrier protein can be used as a protective immunogen in the control of diseases caused by encapsulated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Carrier proteins containing CD4+ epitopes useful for protecting against diseases caused by encapsulated bacteria.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rappuoli R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27-APR-1998;
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                                                                                                                                                    Synthetic
                                                                                                                                                                                                                                                                              10-AUG-2000
                                                                                                                                                                                                                                                                                                          AAY92638
                                                                                                                                                                                                                                                                                                                                    AAY92638 standard; protein; 750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 390 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               polyepitope carrier protein construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; Fig 8; 76pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2000-023325/02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (CHIR-) CHIRON SPA.
                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bacteria. The present sequence represents the amino acid sequence of
                                                                                                          Peptide
                                                                                                                        Key
                                                                  Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                         126
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15; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Grandi G;
                                                                                                                                                                                                                                                                             (first entry)
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                                                                              /label= P30
/note= "foreign epitope"
                                                                                                                          Location/Qualifiers
                                        'note= "foreign epitope
                                                        /label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            46.4%;
                                                                    . 227
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                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 78; DB
Pred. No. 0.00
2; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 3;
0.0031;
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Search completed: July 20, Job time: 48.7377 secs

2004, 06:30:28

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211

GNOYIKANSKFIGITELYSDP GRQYIKANSKFIGITERGRNP 21

231

Query Match Best Local Matches

16;

Conservative

Similarity

46.4%;

Score 78; DB 3; Pred. No. 0.0069;

Length 750; Indels

0

Gaps

0

Mismatches

WO200020027-A2

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CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody preserved in the immunogenized forms. The method is used for inducing cC preserved in the immunogenized forms. The method is used for inducing cm antigens (PA) such as those associated with cancers (self-proteins), e.g. antigens (PA) such as those associated with cancers (self-proteins), e.g. cC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or cfibroblast growth factor 8b (FGP8b). The method comprises effecting cC simultaneous presentation by antigen producing cells (APCs) of the cC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) cC group derived from the PA and/or at least 1 B-cell group derived from the CC cell-associated PA; and (2) at least 1 first T helper cell group which is cC foreign to the animal. Analogues of human, human Her2 and CC human, murine FGF8b comprising a substantial part of all known and CC predicted CTL and B-cell epitopes of the respective PA and including at CC least one foreign T helper epitope are also claimed. The method is used CC to treat prostate, prostate/breast or breast cancer when the PA is human CC pSM, FGF8b and Her2, respectively. Note: This sequence was constructed CC from the wild type human PSM (AAY92619), which appears on pages 184-187 cof the energification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Inducing antigens
                                                                                                                                                                                                                                                                                                                                                                                                                                        antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30) The immunogenic analogues of PSM can be used in the claimed method as an autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
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20-OCT-1998;
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Sequence
                                         of the specification
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 immune responses to weakly immunogenic, tumor associated peptide for the treatment of breast and prostate cancer.
750 AA;
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Birk P, Karlsson G;
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98US-0105011P.
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Gapop 10.0 , Gapext 0.5
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1: pir1:*
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180
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protein -	nef protein - simi	PIOCETI	protein -	nef protein - huma	nef protein - simi	COXTINETI	towil vein	protein -		protein (c	protein -	protein -	protein -	protein	protein (c	protein -	protein	protein (c	protein -	accessory	protein -	protein -	f protein -	f protein (c	f protein -	nef protein - huma	Description				

61 33.9 260 1 ASLJCZ nef protein - huma 60 33.3 240 2 S24572 nef protein - huma 59 32.8 257 2 S12160 nef protein - huma 58 32.2 266 2 S46353 nef protein - simi 56 31.1 251 2 S54867 nef protein - simi 56 31.1 255 2 S53099 nef protein - simi 57 30.6 239 2 S61205 nef protein - simi 58 30.6 239 2 S61205 nef protein - simi 59 30.6 244 2 S61205 nef protein - simi 50 30.6 244 2 S61208 nef protein - simi 50 30.6 246 2 S54853 nef protein - simi 51 30.6 246 2 S54853 nef protein - simi 52 30.6 250 2 S61204 nef protein - simi 53 30.6 250 2 S61204 nef protein - simi 54.5 30.3 3430 1 GNWWV 55 30.3 3430 1 GNWWV 56 28.9 211 1 ASLJM5 57 28.9 211 1 ASLJM5 58 30.6 250 2 S61206 nef protein - simi 59 28.9 211 1 ASLJM5 59 30.6 nef protein - simi	45	44	43	42	41	40	9	38	37	36	35	34	<b>3</b> 3	32	31	3.0
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	NEF protein	nef protein	NEF protein	genome polyp	NEF protein											

### ALIGNMENTS

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R;Muesing, M.A.; Smith, D.H.; Cabradilla, C.D.; Benton, C.V.; Lasky, L.A.; Capon, D.J. Nature 313, 450-458, 1995
A;Title: Nucleic acid structure and expression of the human AIDS/lymphadenopathy retrovi A;Reference number: A93355; MUID:85111157; PMID:2982104
A;Accession: A04007
A;Accession: A04007
A;Residues: 1-206 <MUE>
A;Cross-references: GB:K02083; NID:g555008; PIDN:AAB59874.1; PID:g328560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ASLJVL

ASLJVL

nef protein - human immunodeficiency virus type 1 (isolate LV)

N;Alternate names: 3'-orf protein; orf-F protein

C;Species: human immunodeficiency virus type 1, HIV-1

C;Date: 17-May-1985 #sequence_revision 17-May-1985 #text_change 16-Jul-1999

C;Accession: A04007

C;Accession: A04007
                                                                                                                               A;Gene: nef; 3'-orf; orf-F
C;Superfamily: AIDS nef pro
C;Keywords: AIDS; immunode!
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Proc. Natl. Acad. Sci. U.S.A. 83, 2209-2213, 1986

A;Title: Three novel genes of human T-lymphotropic virus

A;Reference number: A94093; MUID:86177573; PMID:3008154
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ASIJIZ

RESULT 1

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C;Superfamily: AIDS nef protein
C;Keywords: AIDS; immunodeficiency
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A; Residues: 1-206 < ARY >
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16; Conserv
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84.2%;
Score 85;
Pred. No.
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RESULT
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A;Title: Polymorphism of the 3' open reading frame of the virus associated with the acqual A;Reference number: S03244; MUID:86067228; PMID:2999715
A;Accession: S03245
                                                                                RESULT 5

ASIJH3

ASIJH3

ASIJH3

N;Alternate names: 3'-orf protein; orf-F protein

C;Species: human immunodeficiency virus type 1 (isolate HTLV-III, BH10)

C;Species: human immunodeficiency virus type 1, HIV-1

A;Note: host Homo sapiens (man)

C;Date: 17-May-1985 #sequence_revision 17-May-1985 #text_change 31-Jan-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Harris, M.; Hislop, S.; Patsilinacos, P.; Neil, J.C. submitted to the EMBL Data Library, November 1991 A;Description: In vivo derived HIV-1 NEF genes are het
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Species: human immunodeficiency virus type 1, HIV-1
C;Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change
C;Accession: S24985
                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: EMBL:X63044; NID:g60123; PIDN:CAA44770.1; PID:g60124 C;Superfamily: AIDS nef protein
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A; Accession: S24985
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A; Residues: 1-206 < RAT>
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C;Date: 28-Feb-1990 #sequence_revision 28-Feb-1990 #text_change 20-Sep-1999
               R;Ratner, L.; Haseltine, W.; Patarca, R. nberger, J.A.; Papas, T.S.; Ghrayeb, J.; Nature 313, 277-284, 1985
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 A;Title:
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nucleotide sequence of the AIDS virus, HTLV-III
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HXB3) - human immunodeficiency virus type
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Pred.
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                                                                                                                                                                                                                                                                                                                                                        Score 83;
Pred. No.
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                               R.; Livak, K.J.; Starcich, B.
J.; Chang, N.T.; Gallo, R.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  85;
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                                                                                                                                                                                                                                                                                                                                                        DB 2; L
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0.00013;
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                                                    B.; Josephs,
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RESULT 8
ASLJFV
nef protein
N; Alternate

names: 3

3'-orf protein; orf-F protein

(isolate LAV-la)

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nef protein - human immunodeficiency virus type 1
(;Species: human immunodeficiency virus type 1, HIV-1
(;Date: 20-Oct-1994 #sequence_revision 10-Nov-1995 #text_change (
C;Accession: S43467
R;Freund, J.; Kellner, R.; Houthaeve, T.; Kalbitzer, H.R.
Bur. J. Biochem. 221, 811-819, 1994
A;Title: Stabbility and proteolytic domains of Nef protein from h
A;Reference number: S43467; MUID:94229079; PMID:8174561
A;Accession: S43467
A;Accession: S43467
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S43467
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A;Accession: A04405
A;Molecule type: DNA
A;Residues: 1-205 <RAT>
C;Genetics:
                                                                                                                                         A;Molecule type: DNA
A;Residues: 1-205 <SEC>
A;Residues: 1-205 <SEC>
C;Comment: This protein, an accessory viral protein, acts as a nuclear regulatory factor binds p53 via its amino-terminal domain and protects cell against p53-mediated apoptosis C;Keywords: GATA-1; Nef
                                                                                                                                                                                                                                R;Secco, P.; Cotella, D.; Santoro, C. Biochem. Biophys. Res. Commun. 305, 1061-1066, 2003 A;Title: Selection of peptides with affinity for the A;Reference number: JC7975; PMID:12767938 A;Accession: JC7975
                                                                                                                                                                                                                                                                                                                          C;Species: Mus musculus (house mouse)
C;Date: 25-Aug-2003 #sequence_revision
C;Accession: JC7975
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JC7975
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A;Molecule type: protein
A;Residues: 1-205 <FRE>
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C;Superfamily: AIDS nef protein
C;Keywords: AIDS; immunodeficiency
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                                                                                                                                                                                                                                                                                                                                                                               HIV accessory protein Nef
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                                                                                       Best
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                                20 FPVTPQVPLRPMTYK 34
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15; Conserv
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15; Conserv
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FPVTPQVPLRPMTYK 82
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                                                                    clarity 100.0%;
Conservative
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ilarity 100.0%;
Conservative (
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                                                                  %; Score 83; DB
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Pred. No.
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                                                                                                          DB 2;
                                                                                       0.00025;
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                                                                      Indels
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RESULT 10
833986
833986
c, Species: human immunodeficiency virus type c, Species: human immunodeficiency virus type 1, C, Date: 19-Mar-1997 #sequence_revision 19-Mar-19 C, Accession: S33986
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Nucleic Acids Res. 13, 8219-8229, 1985
A;Title: Polymorphism of the 3' open reading frame of the virus associated with the acqueristic acids and the second se
                                 R;Carlini, F. submitted to the
                                                               R;Carlini,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nef protein (clone HXB2) - human immunodeficiency virus type 1
N,Alternate names: 3'-orf protein
C;Species: human immunodeficiency virus type 1, HIV-1
C;Date: 28-Feb-1990 #sequence_revision 28-Feb-1990 #text_change 30-Sep-1993
C;Accession: S03244
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A;Note: host Homo sapiens (man)
C;Date: 17-May-1985 #sequence_revision 17-May-1985 #text_change 16-Jul-1999
C;Accession: A04008; S14609
R;Main-Robson, S.; Sonigo, P.; Danos, O.; Cole, S.; Alizon, M.
Cell 40, 9-17, 1985
Cell 40, 9-17, 1985
A;Title: Nucleotide sequence of the AIDS virus, LAV.
A;Reference number: A90886; MUID:85099333; PMID:2981635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C; Superfamily:
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A; Residues: 1-206 < RAT>
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C;Superfamily: AIDS nef pro
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R;Ciccarelli, R.B.
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A; Residues: 1-206 <WAI>
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AIDS; immunodeficiency; phosphoprotein
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EMBL Data Library,
er: S33979
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100.0%; Pr
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                          November 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                    s type 1, HI
19-Mar-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . 83;
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                                                                                                                                                   HIV-1
                                                                                                              #text_change 20-Sep-1999
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RESULT 13 S54385 nef protei

protein

human

immunodeficiency virus

type

1 (fragment)

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A;Accession: S33986
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-206 <CAR>
A;Cross-references: EMBL:
C;Superfamily: AIDS nef p
                                                                                                                              A;Note:
C;Superf
                                                                                                                                                                                                                                                                                                      nef protein - human immunodeficiency virus type 1
C;Species: human immunodeficiency virus type 1, HIV-1
C;Date: 25-Feb-1994 #sequence_revision 01-Dec-1995 #text_C;Accession: S25937
                                                                                                                                                                                                                                                                                                                                                                           RESULT 12
S25937
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                                                                                                                                         A;Cross-references: EMBL:X57465; NID:g60217; PIDN:CAA40702.1; A;Note: the nucleotide sequence was submitted to the EMBL Data
                                                                                                                                                                                                                                                                         R;Guo, H.G.; Chermann, J. Nature 349, 745-746, 1991
                                                                                                                                                                            A; Molecule type: nucleic acid
A; Residues: 1-206 < GUO>
                                                                                                                                                                                                                            A;Title: Sequence analysis of original HIV-1.
A;Reference number: S25937; MUID:91156044; PMID:2000145
A;Accession: S25937
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A;Title: Cytotoxicity resulting from addition of HIV-1 Nef N-terminal peptides A;Reference number: JC5400; MUID:97271389; PMID:9128340
A;Accession: JC5400
A;Molecule type: protein
A;Residues: 1-206 -MAC>
                                                                                                                                                                                                           A;Status: preliminary; nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C; Superfamily: AIDS nef protein F; 2-206/Product: nef protein #s
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                                                                                                                           ;Note: the nucleotide sequence;Superfamily: AIDS nef protein
                                                                  Matches
                                                                            Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Comment: The amino-terminal part possesses membrane-perturbing
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                            ERGREPVIPOVPLRPMIYK 34
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                                                                                                                                                                                                                                                                                  J.C.; Waters, D.; Hall, L.; Louie, A.; Gallo, R.C.; Streicher,
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82
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nef protein - human immunodeficiency virus type 1 (isolate NDK)
N;Alternate names: 3'-orf protein; orf-F protein
C;Species: human immunodeficiency virus type 1, HIV-1
C;Species: human immunodeficiency virus type 1, HIV-1
C;Date: 30-Sep-1991 #sequence_revision 30-Sep-1991 #text_change 16-Jul-1999
C;Accession: JQ0068
C;Accession: JQ0068
Gene 81, Sire, J; Zachar, V.; Rey, F.; Barre-Sinoussi, F.; Galibert, F.; Hampe, A.;
Gene 81, 275-284, 1989
A;Reference number: JQ0065; MUID:90034200; PMID:2806917
A;Accession: JQ0068
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C;Date: 15-Jul-1995 #sequence_revision 01-Sep-1995 #text_change 20-Sep-1999
C;Accession: S54385
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nef protei
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                                                                                                                                                                                                                                                                                         nef protein - human immunodeficiency virus Zr-6
N;Alternate names: 3'-orf protein; orf-F protein
C;Species: human immunodeficiency virus Zr-6
C;Date: 30-Sep-1987 #sequence_revision 30-Sep-1987 #text_change 16-Jul-1999
C;Accession: F26192
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R;Theodore, T.; Buckler-White,
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A;Molecule type: genomic RNA
A;Residues: 1-97 <THEP
A;Cross-references: EMBL:M224
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-207 <SPI>
A; Gene: nef; 3'-orf; orf-F
C; Superfamily: AIDS nef protein
C; Keywords: AIDS; immunodeficiency
                                                                     A;Cross-references: GB:K03458; GB:M16322; NID:g329398; PIDN:AAA45381.1; PID:g329404
C;Genetics:
                                                                                                                                                                   A;Title: Molecular characterization of human immunodeficiency virus from Zaire: nucleoti
A;Reference number: A26192; MUID:87248097; PMID:3036660
A;Accession: F26192
                                                                                                                                                                                                                                                Gene 52, 71-82,
                                                                                                                                                                                                                                                                     R;Srinivasan, A.;
                                                                                                                        A;Molecule type: DNA
A;Residues: 1-212 <SRI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Keywords:
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family: AIDS nef protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ch 43.3%; Score 78; DB 1; Length 207; Similarity 75.0%; Pred. No. 0.0013; 15; Conservative 1; Mismatches 4; Indels
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75.0%; Pred. No. 0.00056;
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Query Match

43.3%; Score 78;

DB 1;

Length 212;

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                                          Best Local Similarity 75.0%; Matches 15; Conservative
 69
                     15 TERGREPVTPQVPLRPMTYK 34
SEEVGEPVRPQVPLRPMTYK 88
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Pred. No. 0.0013;

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Search completed: July 20, Job time: 11.7049 secs 2004, 06:34:10

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Title:
Perfect score:
Sequence:
     Database :
                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
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Maximum DB seq length: 2000000000
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SwissProt_42:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

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NEF SIVAL NEF HV2CA NEF HV2CA NEF HV2D2 NEF HV2D2 NEF HV2D1 NEF SIVVA POLG MNV ARHC HUMAN NEF SIVML NEF SIVML

## ALIGNMENTS

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16 ERGREPUTPQVPLRPMTYK 34  :	Query Match 47.2%; Score 85; DB 1; Length 206; Best Local Similarity 84.2%; Pred. No. 3.1e-05; Matches 16; Conservative 1; Mismatches 2; Indels 0; Gaps 0;	re, Lipoprotein. glycine (in host DF79A46 CRC64,	This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).	MEDLINE=86039140; PubMed=3008154; Arya S.K., Gallo R.C.; "Three novel genes of human T-lymphotropic virus type III: immune reactivity of their products with sera from acquired immune deficiency syndrome patients."; Proc. Natl. Acad. Sci. U.S.A. 83:2209-2213(1986). [2] POST-TRANSLATIONAL MODIFICATIONS, AND FUNCTION. MEDLINE=88039140; PubMed=3118220; GUY B., Kieny MP., Riviere Y., le Peuch C., Dott K., Girard M., Montagnier L., Leccoq JP.; "HIV F/3' orf encodes a phosphorylated GTP-binding protein resembling an oncogene product."; Nature 330:266-269(1987)i- FUNCTION: NEF has GTPase, GTP-binding and autophosphorylating activities. It seems to down-requilate the CDA(TA) anticon	[ [ [ ]

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EKVGFPVTPQVPLRPMTYK 82

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P03405;
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InterPro; IPRO1558; HIV Nef.
Pfam; PR00469; F-protein; 1.
ProDom; PD000031; HIV Nef; 1.
AIDS; Myristate; GTP-binding; Lipoprotein.
AIDS; Myristate; GTP-binding; Lipoprotein.
LIPID 2 N-myristoyl glycine (in host).
LIPID 2 2 N-myristoyl glycine (in host).
LIPID 2 2 1 1 2 2 2 1 2 3 3 5 2 MW; EDE64281A17C6735 CRC64;
                                                                                                        P03404;
21-JUL-1986
13-AUG-1987
10-OCT-2003
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             an oncogene product.";
Nature 330:266-269(1987)
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MEDLINE=88039140; PubMed=3118220;
Guy B., Kieny M.-P., Riviere Y., le Peuch C., Dott
Montagnier L., Lecocq J.-P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Nucleic acid structure and expression AIDS/lymphadenopathy retrovirus.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human immunodeficiency virus type 1 (PV22 isolate) (HIV-1).
Viruses; Retroid viruses; Retroviridae; Lentivirus.
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21-JUL-1986 (Rel. 01, Last sequence update)
10-CCT-2003 (Rel. 42, Last annotation update)
Negative factor (F-protein) (27 kDa protein)
                                                     Negative
NEF.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Montagnier L., Lecocq u.-k.;
"HIV F/3' orf encodes a phosphorylated GTP-binding protein resembling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nature 313:450-458(1985).
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PIR; A04007; ASLJVL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; K02083; AAB59874.1;
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                         immunodeficiency virus type 1 (BH10 isolate) (HIV-1).
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                                                                            factor (F-protein) (27 kDa protein) (3'ORF).
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                                                                                                      (Rel. 01, Created)
(Rel. 05, Last sequence update)
(Rel. 42, Last annotation update)
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th D.H., Cabradi
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    Mismatches

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OS Human
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NEF HV1H2

P04\(\overline{6}\)01; 009780;

13-AUG-1987 (Rel. 05, Created)

15-JUL-1999 (Rel. 38, Last sequence update)

10-OCT-2003 (Rel. 42, Last annotation update)

10-OCT-2003 (Rel. 42, Last annotation update)

10-OCT-2003 (Rel. 42, Last annotation update)
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Ratner L., Haseltine W., Patarca R., Livak K.J., Starcich Josephs S.F., Doran E.R., Rafalski J.A., Whitehorn E.A., Baumeister K., Ivanoff L., Petteway S.R. Jr., Pearson M.L. Lautenberger J.A., Papas T.S., Ghrayeb J., Chang N.T., Gal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Viruses; Retroid viruses; Retroviridae; Lentivirus.
NCBI_TaxID=11678;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               an oncogene product.";
Nature 330:266-269(1987)
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                 SEQUENCE FROM N.A.
MEDIJINE=87299196; PubMed=3040055;
Ratner L., Fisher A., Jagodzinski
Gallo R.C., Wong-Staal F.;
"Complete nucleotide sequences of
virus.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
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LIPID 2 N-myristovl o
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=88039140; PubMed=3118220;
Guy B., Kieny M.-P., Riviere Y., le Peuch C., Dott
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF00469; F-protein; 1. ProDom; PD000031; HIV_Nef; 1.
                                                                                                                                                     Human immunodeficiency virus type 1 (HXB2 isolate)
Viruses; Retroid viruses; Retroviridae; Lentivirus.
   AIDS Res.
                                                                                                                                       NCBI_TaxID=11706;
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MISCELLANDOUS: IN THIS ISOLATE A MUTATION IN POSITION 124 ADDS A STOP CODON AND THE PROTEIN IS MUCH SHORTER THAN IN OTHER ISOLATES
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 Retroviruses 3:57-69(1987)
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100.0%; Pred. No.
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                                                                       L.L., Mitsuya H.,
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P05855;
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10-OCT-2003
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POST-TRANSLATIONAL MODIFICATIONS, AND FUNCTION MEDLINE=88039140; PubMed=3118220; Guy B., Kieny M.-P., Riviere Y., le Peuch C., I
                                                                                                                         Baumeister K., Ivanoff L Lautenberger J.A., Papas Wong-Staal F.;
                                                                                                                               MEDLINE=85111123; PubMed=2578615;
Rather L., Haseltine W., Patearca R., Livak K.J., St
Josephs S.F., Doran E.R., Rafalski J.A., Whitehorn
Baumeister K., Ivanoff L., Petreway S.R. Jr., Pears
Lautenberger J.A., Papas T.S., Ghrayeb J., Chang N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human immunodeficiency virus type 1 (BH8 isolate)
Viruses; Retroid viruses; Retroviridae; Lentivirus
                                                                                  "Complete nucleotide sequence Nature 313:277-284(1985).
                                                                                                                                                                                                                                                  SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ratner L., Fisher A., Jagodzinski L.L., Mitsuya H., Liou R.-S., Gallo R.C., Wong-Staal F., Submitted (APR-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        [2]
REVISIONS.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  oncogene product.";
ture 330:266-269(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FUNCTION: NEF has GTPase, GTP-binding and autophosphorylating activities. It seems to down-regulate the CD4(T4) antigen. MISCELLANEOUS: IN THIS ISOLATE A MUTATION IN POSITION 124 ADDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  European Bioinformatics Institute.
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een the Swiss Institute of Bioinformatics
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(Rel. 42,
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Best Local
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21-JUL-1986 (Rel. 0
21-JUL-1986 (Rel. 0
10-OCT-2003 (Rel. 4
  MEDLINE=96279837; PubMed=8681387;
Lee C.H., Saksela K., Mirza U.A., Chai
"Crystal structure of the conserved on
a Src family cry o
                                                                          Montagnier L., Lecocq J.-P.;
"HIV F/3' orf encodes a phosphorylated
an oncogene product.";
                                                                                                                                                                           SEQUENCE FROM N.A. (CLONE PNL4-3)
STRAIN-Isolate New York-5;
Buckler C.E., Buckler-White A.J.,
                                                                                                                 Guy B., Kieny M.-P., Riviere Y.,
                                                                                                                               MEDLINE=88039140;
                                                                                                                                                                   Submitted (JUN-1988) to
                                                                                                                                                                                                                            Wain-Hobson S., Sonigo P., Danos O., Co
"Nucleotide sequence of the AIDS virus,
Cell 40:9-17(1985).
                                                                                                                                                                                                                                                                                                          Human immunodeficiency virus type 1 (BRU isolate) (Human immunodeficiency virus type 1 (New York-5 iso Viruses; Retroid viruses; Retroviridae; Lentivirus.NCBI_TaxID=11686, 11698;
                                                                                                                                          POST-TRANSLATIONAL MODIFICATIONS,
                                                                                                                                                                                                                                                               MEDLINE=85099333;
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ProDom; PD000031; HIV Nef; 1.
AIDS; Myristate; GTP-binding; Lipoprotein.
LIPID 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a chetween the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and formatical the statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; K02011; -; NOT ANNOTATED HSSP; P03406; 1EFN.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        an oncogene product.";
Nature 330:266-269(1987)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Montagnier L., Lecocq J.-p.;
"HIV F/3' orf encodes a phosphorylated GTP-binding protein resembling
an oncodene product.":
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15; Conserv
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domain.";
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; 8EC12F6650DDD111 (
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        B.T., Kuriyan
e of HIV-1 Nef
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PDB; 1EFN; 11-JAN-97.
PDB; 1AVV; 25-MAR-98.
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Pfam; PF00469; F-protein; 1.
ProDom; PD000031; HIV_Nef; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                   Lipoprotein.
LIPID
                                          NEF
                              Human immunodeficiency virus type 1 (LW12.3 isolate) (HIV-1).
                    Viruses;
          NCBI_TaxID=82834;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tities requires a license agreement (Susend an email to license@isb-sib.ch).
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FUNCTION: NEF has GTPase, GTP-binding and autophosphorylating activities. It seems to down-regulate the CD4(T4) antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; IAVZ; 25-MAR-98.
; IQA4; 26-MAY-99.
; K02013; NEF$BRU.
; M19921; NEF$NL43.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                K02013; AAB59752.1; -. M19921; AAA44993.1; -. A04321; CAA00353.1; -.
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                                                                                                                                                                                                   Similarity
                      Retroid viruses;
                                                                                                                                                    FPVTPQVPLRPMTYK 82
                                                                                                                                                                     FPVTPQVPLRPMTYK 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       state; GTP-binding; Phosphorylation; 3D-structure;
                                                                                                                                                                                                                                                                      143
181
187
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(Rel. 36, Last sequence update)
(Rel. 42, Last annotation update)
                                                                                                                                                                                          Conservative
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23342 MW; 77453FC80B6004F2 CRC64;
                                                                                                                                                                                                  46.1%; Score 83;
100.0%; Pred. No.
                      Retroviridae; Lentivirus
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(IN CLONE PNL4-3).
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                                                   (3'ORF)
                                                                                                                                                                                                              Length 206;
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NEF_HV1Z2
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Best Local
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INTERPRO; IPRO01558; EL.____
Pfam; PF00469; F-protein; 1.
PfcoDom; PD000031; HIV Nef; 1.
ProDom; PD000031; HIV nef; 1.
AIDS; Myristate; GTP-Dinding; 3D-structure; Lipoprotein.
AIDS; Myristate; GTP-Dinding; AIDS; AIDS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Reitz M.S. Jr., Hall L., Robert Guroff M., Lautent Shaw G.M., Kong L.I., Weiss S.H., Waters D., Galld "Viral variability and serum antibody response in infected with HIV type 1 (HTLV type IIIB).", ALDS Res. Hum. Retroviruses 10:1143-1155(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein Sci. 6:1248-1263(1997).
-I- FUNCTION: NEF has GTPase, GTP-binding and autophosphorylating activities. It seems to down-regulate the CD4(T4) antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=97337445; PubMed=9194185; Grzesiek S., Bax A., Hu J.S., Kaufman J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=95127297; PubMed=7826699;
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Tjandra N., Wingfield P.T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRUCTURE BY NMR OF 56-206
                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entropean Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; U12055; AAA76691.1; -. PDB; 2NEF; 07-JUL-97.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Theodore T., Buckler-White A.;
Submitted (NOV-1988) to the HTV data bank.
-!- FUNCTION: NEF has GTPase, GTP-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human immunodeficiency virus type 1 (Z2/CDC-Z34 isolate) (HIV-1).
Viruses; Retroid viruses; Retroviridae; Lentivirus.
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10-OCT-2003
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InterPro; IPR001558; HIV_Nef.
PIR; S54385; S54385
HIV; M22639; NEF$Z2
                                                                            EMBL; M22639; AAA45371.1;
                                                                                                                                                                                                  entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A
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                                                                                                                                                                 or send an email to license@isb-sib.ch).
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(Rel. 12, Last sequence update)
(Rel. 42, Last annotation update)
(Rel. 47, Last annotation update)
ctor (F-protein) (27 kDa protein) (3'ORF) (Fragment).
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100.0%;
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
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                                                                                                                                                                                                                                                                                                                                          restrictions on
                                                                                                                                                                                                                                                                  and
                                                                                                                                                                                                                                                                                                                                                                                    EMBL outstation
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NEF_HV1ND
ID NEF_H
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Best Local S
Matches 15
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Best Local S
Matches 15
                                                                                               ProDom; PD000031; HIV_MEL, ...
AIDS; Myristate; GTP-binding; Lipoprotein.
N-myristoyl glycine (in host)
similarity).
Similarity:
                                                                                                                                                                         EMBL; M27323; AAA44874.1; -.
PIR; JQ0068; QQLLND.
HSSP; P03406; 1EFN.
HIV; M27323; NEFSNDK.
InterPro; IPR001558; HIV Nef.
Dfam. BED0466.
                                                                                                                                                                                                                                                                                                                                      This
                                                                                                                                                                                                                                                                                                                                                                                                                  Gene
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01-NOV-1990 (Rel. 16, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
Negative factor (F-protein) (27 kDa protein)
NEF.
                                                                                                                                                    Pfam; PF00469; F-protein; 1. ProDom; PD000031; HIV_Nef; 1
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                                                                                                                                                                                                                                                                                                                                                                                                                      Spire B., Sire J., Zachar V., Rey F. Hampe A., Chermann J.C.;
"Nucleotide sequence of HIV1-NDK: a human immunodeficiency virus.";
Gene 81.776-204/1000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=90034200; PubMed=2806917; Spire B., Sire J., Zachar V., Rey Hampe A., Chermann J.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF00469; F-protein; 1.
ProDom; PD000031; HIV Nef; 1.
AIDS; Myristate; GTP-binding; Lipoprotein.
LIPID 2 2 N-myristoyl
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human immunodeficiency virus type 1 (ND) Viruses; Retroid viruses; Retroviridae;
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                                                                                                                                                                                                                                                                                                                                                       FUNCTION: NEF has GTPase, GTP-binding and autophosphorylating activities. It seems to down-regulate the CD4(T4) antigen. MISCELLANBOUS: NDK, ISOLATED FROM A ZAIRIAN PATIENT AFFECTED VALUE, AND IS A HIGHLY CYTOPATHOGENIC STRAIN.
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                                                               Similarity
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SEEVGFPVRPQVPLRPMTYK 83
                      TERGREPVIPQVPLRPMIYK 34
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                                                   Conservative
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10592 MW;
                                                           43.3%;
75.0%;
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75.0%;
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                                                             Pred.
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Pred. No.
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                                              Mismatches
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T
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                                                         .00034;
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                                                                     Length 207;
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RESULT 10

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Best Local S
Matches 15
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                                                                              NEF_HV1MN
P05856;
01-NOV-1988
01-NOV-1988
10-OCT-2003
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                                                                                                                                                                                                                                                                                                 HIV; K03458; NBF740.

InterPro; IPR001558; HIV Nef.
Pfam; PF00469; F-protein; 1.
ProDom; PD000031; HIV Nef; 1.
AIDS; Myristate; GTP-Binding; Lipoprotein.
ALDS; Myristate; GTP-Binding; Lipoprotein.
LIPID N-myristoyl glycine (in host)
LIPID NA: 24415 MW; EC095A1B263047CF CRC64;
Viruses; Retroid viruses;
NCBI_TaxID=11696;
[1]
                     Human immunodeficiency virus type 1 (MN isolate) (HIV-1). Viruses; Retroid viruses; Retroviridae; Lentivirus.
                                                        NEF
                                                                    Negative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            an oncogene product.";
Nature 330:266-269(1987).
-!- FUNCTION: NEF has GTPase, GTP-binding and autophosphorylating activities. It seems to down-regulate the CD4(T4) antigen.
                                                                                                                                                                                                                                                                                                                                                                                                       PIR; F26192; QQLJZR.
HSSP; P03406; 1EFN.
HIV; K03458; NEF$Z6.
                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; K03458; AAA45381.1; -. PIR; F26192; QQLJZR.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the European Bioinformatics Institute.
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"HIV F/3' orf encodes a phosphorylated GTP-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=88039140; PubMed=3118220;
Guy B., Kieny M.-P., Riviere Y., le Peuch C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Molecular characterization of human Caire: nucleotide sequence analysis i domains in the envelope gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=87248097; PubMed=3036660;
Srinivasan A., Anand R., York D., Rangar
Schochetman G., Curran J., Kalyanaraman
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15; Conserv
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tor (F-protein) (27 kDa protein
                                                                                                                                                                                                                                                             43.3%; ilarity 75.0%; Conservative
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1; Mismatches
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naraman V.S.,
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Best Local
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MEDIINE=9317906; PubMed=2370688;

MEDIINE=9317906; Cheng-Mayer C., Bauer D., Levy J
York-Higgins D., Cheng-Mayer C., Bauer D., Levy J
"Human immunodeficiency virus type 1 cellular hos
replication, and cytopathicity are linked to the
the viral genome.";
J. Virol. 64:4016-4020(1990).

J. Virol. 64:4016-4020(1990).

activities. It seems to down-regulate the CD4
activities.
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MEDLINE=88219542; PubMed=3369091;
Gurgo C., Guo H.-G., Franchini G., Aldovini A., Collalti E.,
Farrell K., Wong-Staal F., Gallo R.C., Reitz M.S. Jr.;
"Envelope sequences of two new United States HIV-1 isolates.";
"Envelope sequences of two new United States HIV-1 isolates.";
"Envelope 164.531-536(1988).

Virology 164.531-536(1988).

The seems to down-regulate the CD4(T4) antigen.
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P19545;
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Pfam; PF00469; F-protein; 1.
ProDom; PD000031; HIV Nef; 1.
AIDS; Myristate; GTP-binding; Lipoprotein.
LIPID 2 2 N-myristoyl q
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-!- MISCELLANEOUS: THE MN ISOLATE WAS TAKEN FROM A PEDIATRIC AIDS
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        EMBL; AY352275; AAQ17032.1; -. HSSP; P03406; LEFN. HIV; M38427; NEF$SF33.
                                                                                                                                                              entities requires a license agreement (S or send an email to license@isb-sib.ch).
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LIPID 2 N-myristoyl glycine (in host) similarity).
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NEF HV1EL
P04604;
13-AUG-1987
                                                                                                                                                                                                                                                                                                                                                                                                              diversity from other HIV-1 isolates.";
AIDS Res. Hum. Retroviruses 6:1073-1078(1990).
-!- FUNCTION: NEF has GTPase, GTP-binding and autophosphorylating activities. It seems to down-regulate the CD4(T4) antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAR-1992 (Rel. 21, Created)
01-MAR-1992 (Rel. 21, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
Negative factor (F-protein) (27 kDa protein)
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Probom; PD000031; HTV.Nef; 1.
AIDS; Myristate; GTP-binding; Lipoprotein.
LIPID 2 N.myristoyl glycine (in host)
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HSSP; P03406; 1EFN.
HIV; K03454; NEF$ELI.
InterPro; IPR001558; HIV Nef.
Pfam; PF00469; F-protein; 1.
ProDom; PD000031; HIV Nef; 1.
ProDom; PD000031; HIV Nef; 1.
AIDS; Myristate; GTP-binding; Lipoprotein.
LIPID 2 2 N-myristoyl gly.
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P19546;
           MEDLINE=90347835; PubMed=2384920; Cheng-Mayer C., Quiroga M., Tung J.W., Dina D., Levy J.; "Viral determinants of human immunodeficiency virus type 1 T-cell or macrophage tropism, cytopathogenicity, and CD4 antigen modulation."; J. Virol. 64:4390-4398(1990).

-i- FUNCTION: NEF has GTPase, GTP-binding and autophosphorylating
                                                                                                                                                                                                                                                                                                   01-FEB-1991 (Rel. 17, Created)
01-FEB-1991 (Rel. 17, Last sequence update)
10-CCT-2003 (Rel. 42, Last annotation update)
Negative factor (F-protein) (27 kDa protein)
NEF.
                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                      Human immunodeficiency virus type 1 (SF162 isolate) (HIV-1). Viruses; Retroid viruses; Retroviridae; Lentivirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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MEDLINE=86245056; PubMed=2424612;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FUNCTION: NEF has GTPase,
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AIDS; Myristate; GTP-binding; Lipoprotein.
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                                                                                                                                                                                                                                                                                                                                      activities. It seems to down-regulate the CD4(T4) antigen.
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Pred. No.
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	REDVTDOUDT.DOWTVE 34	Similarity 58.1%; Pred. No. 0.0001;  B; Conservative 4; Mismatches 4; Indels	48.1%; Score 86.5; DB 15	3 142 AA;	NON TER 142 142	ProDom; PD000031; HIV Nef; 1.	Pfam; PF00469; F-protein; 1.	InterPro: IPRO/1558 + HTV Nef				-!- FUNCTION: NEF HAS GTPASE, GTP-BINDING AND AUTOPHOSPHOPYLATING	Submitted (JUN-2002) to the EMBI/GenBank/DDRI databases	immunodeficiency virus type 1 in a particular with contact	"Fetencia Suzuki Y., Hoshino H., Daar E.S., Koyanagi Y.;			NCBI TaxID=11676;	Human Immunodeliciency virus 1. Viruses: Retroid viruses: Retroviridae: Leptivirus	ENV	(Fragment).	Last annotation update)	(Translitet. 22,	(Tremblied, 22,		Q8JE99 PRELIMINARY; PRT; 142 AA.	99	LT 1	

Q8JE98; 863E98

PRELIMINARY;

141

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Best Local

Similarity

84.2%;

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Best Local S
Matches 16
Query Match
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01-OCT-2002
01-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AIDS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-OCT-2002 (TrEMBLrel. 22, Created)
01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Envelope glycoprotein (Negative factor) (F-protein)
(Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Takeuchi H., Suzuki Y., Hoshino H., Daar E.S., Koyanagi Y.;
"Extensive variation of CXCR4- and CCR5-dependent human immunodeficiency virus type 1 in a patient with acute infection.";
Submitted (JUN-2002) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: NEF HAS GTPASE, GTP-BINDING AND AUTOPHOSPHORYLATING ACTIVITIES. IT SEEMS TO DOWN-REGULATE THE CD4(T4) ANTIGEN (BY
                                                                                                                                                                                                                                                  Takeuchi H., Suzuki Y., Hoshino H., Daar B.O., Norman Takeuchi H., Suzuki Y., Hoshino H., Daar B.O., Norman Takeuchi H., Suzuki Y., Hoshino H., Daar B.O., Norman Takeuchi H., Suzuki Y., Hoshino H., Daar B.O., Norman Takeuchi I., Batient with acute it submitted (JUN-2002) to the EMBL/GenBank/DDBJ databases Submitted (JUN-2002) to the EMBL/GenBank/DDBJ databases i- FUNCTION: NEF HAS GTPASE, GTP-BINDING AND AUTOPHOSPI I. FUNCTION: THE CD4 (T4) A
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                                           NON TER
                                                                                                                                                                                                                                                                                                                                                                                                                                   Human immunodeficiency virus Viruses; Retroid viruses; Ret NCBI TaxID=11676;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-OCT-2002 (TrEMBLrel.
01-OCT-2002 (TrEMBLrel.
01-OCT-2003 (TrEMBLrel.
Envelope glycoprotein ()
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human immunodeficiency
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                                                                                                               EMBL; AB086310; BAC02672.1; --
GO; GO:0005525; F:GTP binding;
InterPro; IPR001558; HIV.Mef.
Pfam; PF00449; F-protein; 1.
ProDom; PD000031; HIV_Nef; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (Fragment)
                                                                                              AIDS;
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L; AB086307; BAC02669.1; -.
GO:0005525; F:GTP binding; IEA.
                                                                                                                                                                                                                               ACTIVITIES. IT SEEMS TO DOWN-REGULATE SIMILARITY).
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                                                                                            GTP-binding; Lipoprotein; Myristate
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84.2%;
  47.8%;
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1. 22, Last sequence update)
1. 25, Last annotation update)
(Negative factor) (F-protein)
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                                                  ΜW;
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Pred. No.
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    Score 86;
                                                                                                                                                                                             IEA.
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                                                09C2333F280A0FDF CRC64;
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       DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Lentivirus
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       15;
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AUTOPHOSPHORYLATING
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ent human
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  Length 142;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (27
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                                                                                                                                                                                                                                                                                                                                  infection."
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SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

Takeuchi H., Suzuki Y., Hoshino H., Daar B.S., Koyanagı x.;

"Excensive variation of CXCR4- and CCR5-dependent human

"Excensive variation of CXCR4- in a patient with acute infection.";

immunodeficiency virus type 1 in a patient with acute infection.";

submitted (JUN-2002) to the EMBL/GenBank/DBB databases.

Submitted (JUN-2002) to the EMBL/GenBank/DBB AUTOPHOSPHORYLATING

-!- FUNCTION: NEF HAS GTPASE, GTP-BINDING AND AUTOPHOSPHORYLATING

-!- FUNCTION: NEF HAS GTPASE, GTP-BINDING AND AUTOPHOSPHORYLATING

-!- FUNCTION: NEF HAS GTPASE, GTP-BINDING THE CD4(T4) ANTIGEN (BY
                                                                                                                                                                                                                                                                                                                                                                                                    01-OCT-2002
01-OCT-2002
01-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Sequence heterogeneity of Nef transcripts at different stages of disease."; Virology 223:245-250(1996).
-I- FUNCTION: NEF HAS GTDASE, GTP-BINDING ACTIVITIES. IT SEEMS TO DOWN-REGULATE T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; U44452; AAB38204.1; -. HSSP; P03406; 1EFN.
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Hahn B., Powderly W., Arens M.
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EMBL; Abv. (60; GO:0005525;
                                                                                                                                                                                                                                                        Human immunodeficiency virus 1.
Viruses; Retroid viruses; Retroviridae;
NCBI_TaxID=11676;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q8JE97;
Q8JE97;
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ProDom; PD000031; HIV_Nef; 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human immunodeficiency virus
                                                                                                                                                                                                                                                                                                                                                                          Envelope glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AIDS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (nterPro;
                                                                                                                                                                                                                                                                                                                                                          (Fragment).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GO:0005525; F:GTP binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTP-binding; Lipoprotein; Myristate.
NCE 208 AA; 23596 MW; 04E09B33B59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    64
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Retroid viruses;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel.
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                  BAC02670.1; -. F:GTP binding;
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58.1%;
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Last annotation update)
tive factor) (F-protein)
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Pred. No. 0.000
3; Mismatches
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7;
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                                                                                                                                                                                                                                                                                             Lentivirus
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Q8JE96
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Best Local :
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Best Local
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Q85588;
01-NOV-1996
01-NOV-1996
 SEQUENCE FROM N.A.
MEDLINE=86067228; Pu
Ratner L., Starcich
                                                                                             01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
T-lymphotropic virus type III (HTLV III) 3' ORF HXB3
                                                        Viruses;
                                                                                      T-lymphotropic virus type I
factor) (F-protein) (27 kDa
                                                                                                                                                                                                                                                                                                                                                                                                       Takeuchi H., Suzuki Y., Hoshino H., Daar B.S., Koyanagi Y.;
"Extensive variation of CXCR4- and CCR5-dependent human
immunodeficiency virus type 1 in a patient with acute infection.";
Submitted (JUN-2002) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: NEF HAS GTPASE, GTP-BINDING AND AUTOPHOSPHORYLATING
                                                                  Aids-associated
                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                           AIDS; GTP-binding; Lipoprotein; Myristate.
                                                                                                                                                                                                                                                                                                                                  Pfam; PF00469; F-protein; 1. ProDom; PD000031; HIV_Nef; 1.
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GO
                                                                                                                                                                                                                                                                                                                                                                                EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
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01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Envelope glycoprotein (Negative factor) (F-protein)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPRO01558; HIV_Nef.
Pfam; PF00469; F-protein; 1.
ProDom; PD000001; HIV_Nef; 1.
AIDS; GTP-binding; Lipoprotein; Myristate.
NON TER 142 142
TEATTONICO 12 142
TEATTONICO 12 142
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01-OCT-2002
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                                                                                                                                                                                                                                                                                                                                                      L; AB086309; BAC02671.1; -. GO:0005525; F:GTP binding; erPro; IPR001558; HIV_Nef.
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                                                                  retrovirus
                                                      viruses;
           PubMed=2999715;
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84.2%;
 Josephs
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PASE, GTP-BINDING AND AUTOPHOSPHORYLATING
TO DOWN-REGULATE THE CD4(T4) ANTIGEN (BY
                                                        Retroviridae
                                                                                                                                                                                                                                                    Score 85; DB:
Pred. No. 0.00
1; Mismatches
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F.,
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 Hahn
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Reddy E.P.,
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Best Local
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Best Local
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SEQUENCE FROM N.A.
SATAGOSTI S., Peeters M.;
Submitted (AUG-1998) to the EMBL/GenBank/DDBJ of the EMBL/GenBank/DDBJ of the EMBL/GenBank/DDBJ of the EMBL/GenBank/DDBJ of the EMBL/GENBAND of the EMBL TO DOWN-REGULATE THE
                                                                                                                                                                                                                                                                                                                                                                                              O91064;
O91064;
01-NOV-1998
01-NOV-1998
01-OCT-2003
                                                                                                                                                                ProDom; PD000031; http://en., AIDS; GTP-binding; Lipoprotein; Myristate.
NON TER 208 208
NON TER 208 AA; 23839 MW; F96EBA1A82BE03C2 CRC64;
                                                                                                                                                                                                                                                                                                                                           Human immunodeficiency virus Viruses; Retroid viruses; Ret NCBI_TaxID=11676;
                                                                                                                                                                                                            Pfam; PF00469; F-protein; 1. ProDom; PD000031; HIV_Nef; 1
                                                                                                                                                                                                                              HSSP; P03406; 1EFN.
GO; GO:0005525; F:GTP binding;
InterPro; IPR001558; HIV_Nef.
                                                                                                                                                                                                                                                              EMBL; AJ233029; CAA13510.1;
                                                                                                                                                                                                                                                                                                                                                                              NEF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00469; F-protein; 1.
ProDom; PD000031; HIV Nef; 1.
AIDS; GTP-binding; Lipoprotein;
SEQUENCE 206 AA; 23419 MW; 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 virus type III.";

Nucleic Acids Res. 13:8219-8229(1985).

-i- FUNCTION: NEF HAS GTPASE, GTP-BINDING ACTIVITIES. IT SEEMS TO DOWN-REGULATE SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; X03188; CAA26947.1; -. HSSP; P03406; 1EFN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           with the acquired immune virus type III.";
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                                                                                                 EEVRFPVKPOVPLRPMTYK
                                                                                                                    ERGREPVTPQVPLRPMTYK 34
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84.2%;
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84.2%;
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le deficiency :
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Pred. No. 0.
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AUTOPHOSPHORYLATING
CD4(T4) ANTIGEN (BY
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01-MAY-1997 01-MAY-1997 01-OCT-2003 Nef protein

(TrEMBLrel. 03, Cr (TrEMBLrel. 03, La (TrEMBLrel. 25, La (Negative factor)

Created)

Last sequence update)
Last annotation update)
r) (27 kDa protein).

P90287; P90287

PRELIMINARY;

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Human immunodeficiency virus 1.
Viruses; Retroid viruses; Retroviridae; Lentivirus.
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01-JAN-1998
01-JAN-1998
01-OCT-2003
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-!- FUNCTION: NEF HAS GTPASE, GTP-BINDING AND AUTOPHOSPHORYLATING ACTIVITIES. IT SEEMS TO DOWN-REGULATE THE CD4 (T4) ANTIGEN (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=97213928; PubMed=9060617;
Salminen M.O., Carr J.K., Robertson D.L., Hegerich P., Go
Koch C., Sanders-Buell E., Gao F., Sharp P.M., Hahn B.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            McCutchan F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Salminen M.O., Carr J.K., Robertson Koch C., Sanders-Buell E., Gao F., S
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STRAIN=ZAM184
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MEDLINE-98105804; PubMed-9445059; Connor R.I., Korber B.T.M., Graham B.S., Hahn B.H., Ho D.D., Walker B.D., Neumann A.U., Vermund S.H., Mestecky J., Jacksc Fenamore E., Cao Y., Gao F., Kalams S., Kunstman K.J., McDor McWilliams N., Trkola A., Moore J.P., Wolinsky S.M.; "Immunological and virological analyses of persons infected immunodeficiency virus type 1 while participating in trials
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                          041645
                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                               Viruses; Retroid viruses;
NCBI_TaxID=11676;
                                                                                                                                                                                                                                                                                   Human immunodeficiency virus
                                                                                                                                                                                                                                                                                                                           Nef protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00469; F-protein; 1. ProDom; PD000031; HIV_Nef; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30; GO:0005525; F:GTP binding;
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ACTIVITIES. IT SEEMS
SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTP-binding; Lipoprotein; Myristate. NCE 207 AA; 23358 MW; A267097BEFS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FIGITERGR---FPVTPQVPLRPMTYK 34
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WLGAQEEGEEVGFPVKPQVPLRPMTYK
                                                                                                                                                                                                                                                                                                          (TrEMBLrel. 05, Createq)
(TrEMBLrel. 05, Last sequence update)
(TrEMBLrel. 25, Last annotation update)
(Tremblrel. 25, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  46.4%;
63.0%;
                                                                                                                                                                                                                                                           Retroviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 83.5; Di
Pred. No. 0.00
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
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Sharp P.,
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                                                          n B.H., HO D.E.,
stecky J., Jackson S.,
stman K.J., McDonald I
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••
                                                                                                                                                                                                                                                                                                                                  (Fragment).
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В.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
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Burke I
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H., Burke D.S.,
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OA158
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RA WALLA
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RA Fen
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RESULT 12
Q79786
ID Q7978
AC Q7978
DT 01-NC
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Best Local
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Best Local
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J. Virol. 72:1552-1576(1998).
-!- FUNCTION: NEF HAS GTPASE, GTP-BIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AIDS; GTP-binding; Lipoprotein; Myristate
NON_TER 90 90
SEQUENCE 90 AA; 9794 MW; A3A713557855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  immunodeliciency...
recombinant gpl20 subunit vaccines.";
J. Virol. 72:1552-1576(1998).
-I- FUNCTION: NEF HAS GTPASE, GTP-BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=98105804; PubMed=9445059; Connor R.I., Korber B.T.M., Graham B.S., Hahn B.H., Ho D.D., Connor R.I., Korber B.T.M., Graham B.S., Kunsted J., Jackson S. Walker B.D., Neumann A.U., Vermund S.H., Mestecky J., Jackson S. Fenamore E., Cao Y., Gao F., Kalams S., Kunsted K.J., McDonald McWilliams N., Trkola A., Moore J.P., Wolinsky S.M.; "Immunoleficiency virus type 1 while participating in trials of recombinant gpl20 subunit vaccines.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR001558; HIV_Nef.
Pfam; PF00469; F-protein; 1.
ProDom; PD000031; HIV_Nef; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; U84886; AAC58933.1; -. GO; GO:0005525; F:GTP binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=11676;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Viruses;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human immunodeficiency virus 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-JAN-1998
01-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-JAN-1998
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                                                                                                                                                                                                                                                                                                                                                                                                                    GO; GO:0005525; F:GTP binding;
InterPro; IRR01558; HIV Nef.
Pfam; PF00469; F-Protein; 1.
ProDom; PD000031; HIV_Nef; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                U84833; AAC58872.1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FPVTPQVPLRPMTYK 34
                                                                                                                                                                                              FPVTPQVPLRPMTYK 34
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                                                                                                                                                                   FPVTPQVPLRPMTYK 84
                                                                                                                                                                                                                                                                                                                                                      118 AA;
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(TrEMBLrel. 05, Last seque
(TrEMBLrel. 25, Last annot
(Negative factor) (27 kDa
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
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100.0%; Pr
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100.0%;
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TO DOWN-REGULATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Retroviridae; Lentivirus
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Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 83; DB 15;
Pred. No. 0.0002;
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                                                                                                                                                                                                                                                                                     Score 83;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IEA
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                                                                                                                                                                                                                                                                                                          83;
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protein) (Fragment).
                                                                                                                                                                                                                                                                                     0.00028;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AND AUTOPHOSPHORYLATING THE CD4 (T4) ANTIGEN (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTOPHOSPHORYLATING CD4 (T4) ANTIGEN (BY
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of
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Q79786; Q79786; 01-NOV-1996

(TrEMBLrel. 01,

Created)

PRELIMINARY;

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RESULT
Q85587
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Best Local Similarity 100.
Matches 15; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 15
                                                                                                                                                                                                                                                                                01-NOV-1996 (TEMBLrel. 01, Created)
01-OCT-2003 (TEMBLrel. 01, Last sequence update)
01-OCT-2003 (TEMBLrel. 25, Last annotation update)
T-lymphotropic virus type III (HTLV-III) 3'ORF HXI
factor) (F-protein) (27 kDa protein)
                                                                                               GO;
                                                                 ProDom;
                                                                            Pfam; PF00469;
                                                                                                          EMBL;
                                                                                                                                                virus type
Nucleic Aci
                                                                                                                                                         "Polymorphism of the 3' open reading frame or "Polymorphism of the 3' open reading frame or "Polymorphism of the 3' open reading frame."
                                                                                                                                                                                             Ratner L., Starcich B., Joseph
Livak K.J., Petteway S.R.Jr.,
                                                                                                                                                                                                                    SEQUENCE FROM N.A. MEDLINE=86067228;
                                                                                                                                                                                                                                                                    Aids-associated retrovirus.
                                                                                                                                                                                                                                                                                                                                                      Q85587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; X63045; CAA44771.1; -. GO; GO:0005525; F:GTP binding; InterPro; IPR001558; HIV_Nef.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ProDom;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AIDS;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nucleotide binding activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "In vivo derived HIV-1 NEF genes are heterogeneous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Harris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=92385154; PubMed=1515209;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=11676;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human immunodeficiency
Viruses; Retroid viruse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nef protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1996
01-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                         13
                                                                                                                        leic Acids Res. 13:8219-8229(1985).
FUNCTION: NEF HAS GTPASE, GTP-BINDING
ACTIVITIES. IT SEEMS TO DOWN-REGULATE
                                                                                           GO:0005525; F:GTP binding;
                                                                                                                  ACTIVITIES. IT SEEMS SIMILARITY).
                                                                                                                                                                                                                                                   ises; Retroid
_TaxID=11966;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S Res. Hum. Retroviruses 8:537-543(1992).
FUNCTION: NEF HAS GTPASE, GTP-BINDING AN
ACTIVITIES. IT SEEMS TO DOWN-REGULATE TH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACTIVITIES. IT SEEMS SIMILARITY).
                                           GTP-binding; Lipoprotein;
NCE 123 AA; 13593 MW; /
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PF00469; F-protein; 1.
m; PD000031; HIV_Nef; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTP-binding; Lipoprotein;
NCE 121 AA; 13506 MW;
                                                                                                                                                                                                                                                                                                                                                                                                        66
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                                                              PD000031; HIV_Nef; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
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                                                                                  IPR001558; HIV_Nef
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Retroid viruses;
                                                                                                                                                                                                                                                                                                                                                                                                                                            46.1%;
ilarity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (TrEMBLrel.
                                                                                                                                                                                                                                                           viruses;
                                                                                                                                                                                                    PubMed=2999715;
46.1%; 5
100.0%; Prr
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                                                                                                                                                                                          Josephs S.F., Pearson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          virus
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25,
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                                                                                                                                                                                                                                                           Retroviridae
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             Score 83;
Pred. No
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                                         A8B6AC3E67A2508A CRC64;
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0B9226A9052A2CC7 CRC64;
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ltine W.A.,
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                                        MEDLINE 96400183; PubMed=8806559;
Ratner L., Joseph T., Bandres J., Ghosh S., H
Hahn B., Powderly W., Arens M.;
"Sequence heterogeneity of Nef transcripts in
at different stages of disease.";
Virology 223:445-250(1996).
-!- FUNCTION: NEF HAS GTPASE, GTP-BINDING AND
ACTIVITIES. IT SEEMS TO DOWN-REGULATE THE
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Best Local
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SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                 Viruses;
                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                     Human immunodeficiency virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Sequence heterogeneity of Nef transcripts at different stages of disease.";
Virology 223:245-250(1996).
-i- FUNCTION: NEF HAS GTPASE, GTP-BINDING ALCTIVITIES. IT SEEMS TO DOWN-REGULATE TO COUNTY TO THE TRANSCRIPT OF T
                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=11676;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q74916
Q74916;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human immunodeficiency virus 1. Viruses; Retroid viruses; Retro NCBI TaxID=11676;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR001558; HIV Nef
Pfam; PF00469; F-protein; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; U44459; AAB38209.1;
HSSP; P03406; 1EFN.
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01-CCT-2003 (TrEMBLrel. 25, Last annotation update)
Nef (Negative factor) (F-protein) (27 kDa protein)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AIDS;
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PD000031; HIV_Nef; 1.
IP-binding; Lipoprotein;
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llarity 100.0%;
Conservative
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                                        AUTOPHOSPHORYLATING CD4 (T4) ANTIGEN (BY
                                                                                                                                                                       HIV-1-infected subjects
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DR HSSP; P03406; 1EFN.
DR GO; GC:0005525; F:GTP binding; IEA.
DR InterPro; IPR001558; HIV_Nef.
DR Pfam; PF00469; F-protein; 1.
DR ProDom; PD000031; HIV_Nef; 1.
KW AIDS; GTP-binding; Lipoprotein; Myristate.
FT NON_TER 176
SQ SEQUENCE 176 AA; 19286 MW; 8EE2DFCBF924430B CRC64;
SEQUENCE 176 AA; 19286 MW; 8EE2DFCBF9
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1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2002s:*
6: geneseqp2003as:*
7: geneseqp2003bs:*
8: geneseqp2004s:*
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Copyright (c) 1993 - 2004 Compugen Ltd.
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result	Score	1 0 H	Length	DB	ID	Description
υL	97	υ.	2 2 8	N	AAY53552	
N	89	9	280	Ŋ	AAW71642	42
. w	89	9	280	N	AAW71363	
4	89	49.4	280	4	AAB98912	N
S	87.5	48.6	25	4	AAB84738	
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11	84	46.7	505	σ	ABR44747	
12	84	46.7	1067	σ	ABR44751	
13	84	46.7	1067	σ	ABR44753	
14	83		30	4	AAB31115	115
15	83	46.1	30	4	AAB30938	Aab30938 Peptide c
16	83		30	4	AAB31009	
17	83	46.1		2	AAY26605	
18	83		33	ω	ABB83185	
19	83	46.1		2	AAR65389	
20	83	9	38	N	AAR74069	4069
21	83	46.1		N	AAY39988	8866
22	83	6		2	AAR42695	p14
23	83	46.1	48	_	AAP92268	
24	83	46.1		N	AAR94760	
25	83	46.1	83	4	AAB98916	

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AABB6000 AABB6000 AARS295 AARS295 AARS2995 AARS2893 AARS20795 AARS20795 AARS2396 ABU63328 AARS2336 AARS2336 AARS2336 AARS2336 AARS2336 AARS2337 AARS3339	0 0 1 7 7 0 0 0 0 1 7 1 0 0 0 0 0 0 0 0	4
	Abb66000 Abb86000 Abr44742 Aam52395 Aar38893 Aar38893 Aaw90179 Aab10054 Aab7003396 Abu63328 Aag63231 Ad667687 Aag663231 Ad6619390 Aag602357 Aag902357 Aag902357 Aag902357	AAG63233

## RESULT 1 AAY53552 ID AAY5 XX AC AAY5 XX AC AAY5 XX Lipo XX Lipo XX Lipo XX Lipo XX Homa XX Homa XX Homa XX FT Modi FT Modi FT Modi FT WOdi FT WOJ IN FR2: XX IN FR2: XX PD 08-( XX PD 08-( XX PD 07-J XX XX PD (IN) PA Synthetic. Homo sapie melanoma; malaria; Lipopeptide; epitope; cytotoxic T lymphocyte; CTL; lipid; spacer; electrical charge; hydrophilicity; vaccine; immune response; HIV; human immunodeficiency virus; hepatitis B virus; papilloma virus; relations of the control of the c 18-JAN-2000 Modified-site Lipopeptide #3. AAY53552; AAY53552 standard; sapiens. (first entry) /note= "contains palmitoyl residue terminus and on the epsilon carbon Location/Qualifiers parasite. protein; 28 A attached at of the side the N-chain" р53; нвv;

08-OCT-1999. FR2776926-A1

07-APR-1998; 98FR-00004323.

(INRM ) INSERM INST NAT SANTE & RECH MEDICALE. (CNRS ) CNRS CENT NAT RECH SCI. (INSP ) INST PASTEUR LILLE.

07-APR-1998;

98FR-00004323.

WPI; 1999-583113/50. Le Gal FA, Guillet JG, Gahery SH, Gras MH, Melnyk o Tartar

A

New lipopeptide containing lipid regions and two epitopes, all separated by peptide spacers that impart hydrophilicity, useful in vaccines.

Example 1; Page 9; 35pp; French.

The invention relates to the generation of a lipopeptide comprising at least one auxiliary T epitope, at least one cytotoxic T lymphocyte (CTL) epitope and at least one lipid residue with (i) the epitopes and lipid portion and (ii) the epitopes, being separated independently by peptide

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RESULT 2
AAW71642
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              spacers. These spacers comprise sequences of amino acids which carry an overall electrical charge in neutral media to ensure that the lipopeptide is hydrophilic. This peptide represents an example of them lipopeptide of the invention. It contains 2 lipid residues attached at the N-terminal end of the molecule and 2 epitopes separated by the spacer residues Serser and Ala-Ala-Ala. Peptides ANY53301-Y53549 represent peptide epitopes used in the generation of the lipopeptides. These are used in therapeutic or prophylactic compositions and vaccines to induce specific immune responses against human immunodeficiency, hepatitis B or papilloma viruses; p53 of melanoma or the malaria parasite
        This polypeptide comprises the POL and nEF epitopes of HIV-1. It is encoded by vCP1433 (see AAV58243). In vCP1433, an HIV pol/nef 'string beads' cassette is placed under control of the vaccinia H6 promoter. pMPC6H6K3E3, containing a vaccinia H6/K3L expression cassette and vaccinia E3L gene with endogenous promoter flanked by the ALVAC C6 insertion site sequences, was used in recombination with vCP1433 to obtain vCP1452 (see AAV58244-45). K3L and E3L are vaccinia virus translation factors. Novel vectors of the invention, such as ALVAC vectors include K3L and/or B3L and are used for enhancing expression gene products that they encode. The translation factors can effect inhibition of eFF-2alpha phosphorylation or inhibition of protein kina
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human immunodeficiency virus 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Vector; gene therapy; vaccine; ALVAC; translation factor; K3L; vCP1433; HIV; pol; nef; epitope.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HIV POL/NEF epitopes
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                                                                                                                                                                                                                                                 Enhancing expression of nucleic acids in cells - by using modified vectors which comprise the nucleic acid and also nucleic acid enco
                                                                                                                                                                                                                                                                                                  WPI; 1998-520819/44.
N-PSDB; AAV58243.
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Paoletti E;
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(UYAR-) UNIV
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3.9e-07;
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        CC encoded by vCP1433 (see AAV60251). In vCP1433, an HIV pol/nef 'string of CC encoded by vCP1433 (see AAV60251). In vCP1433, an HIV pol/nef 'string of CC beads' cassette is placed under control of the vaccinia H6 promoter. CC pMPC6H6K3B3, containing a vaccinia H6/K3L expression cassette and CC vaccinia B3L gene with endogenous promoter flanked by the ALVAC C6 insertion site sequences, was used in recombination with vCP1433 to CC obtain vCP1452 (see AAV60252-53). K3L and B3L are vaccinia virus CC translation factors. New vectors are provided for enhanced expression of CC at least 1 first nucleic acid molecule (NAM) in a cell having a CC particular phenotype. The vector (e.g. NYVAC or ALVAC) is modified to CC comprise the first NAM and at least 1 second NAM encoding a transcription CC comprise the co-temporal expression of the first and second NAMs with respect there is co-temporal expression of the first and second NAMs with respect CC to the phenotype of the cell, and where expression of the second NAM contained transcription or CC comprise expression of the first NAM by enhancing transcription or CC compression and translation. Also claimed is a method for increasing captures of the cell, and the procession of the first NAM by enhancing transcription or CC compression of at least 1 first NAM by such a vector. The vectors can be considered to the procession of the first NAM by enhancing transcription or CC compression of the least 1 first NAM by enhancing transcription or CC compression of the first NAM by enhancing transcription or CC compression of the least 1 first NAM by enhancing transcription or CC compression of the compression of the first NAM by enhancing transcription or CC compression of the compressi
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Matches 17
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tartaglia |
Pincus SE;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                Enhancing expression of nucleic acids in cells - by using vectors which comprise nucleic acid and also nucleic acid transcription factor and optionally translation factor.
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vCP1433; HIV; POL; NEF; epitope.
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7.9e-05;
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                                                                                                           Permitting cessation of antiviral therapy on HIV-infected patients undergoing antiviral therapy, useful for treating HIV-infected patients, by administering nucleic acid based vaccines encoding HIV-specific
                                                                                                                                                              WPI;
 administration of nucleic-acid based vaccines encoding HIV-specific immunogens to the patient, enabling the expression of the HIV-specific immunogens in the patient's cells. The HIV-specific antigens are
                                       who
                                                                               Disclosure;
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                                                                                                                                                                                                                                         31-JAN-2000; 2000US-0179276P
                                                                                                                                                                                                                                                                26-JAN-2001;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           biological response modulator, a growth factor, a recognition therapeutic gene or a fusion protein. (Updated on 17-OCT-2003 standardise OS field)
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                              invention relates to a method for permitting the cessation civiral therapy in HIV-infected patients undergoing antiviral have a controlled level of viraemia. The method involves
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                                                                             Page 12; 57pp; English
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232. :
                                                                                                                                                                                                                                                                                                                                                                                           /note= "Nef-2 CTL epitope
89. .148
                                                                                                                                                                                                                                                                                                                                                                      149.
                                                                                                                                                                                                                                                                                                                                                                                                                            /note= "Pol-3 CTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                'note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein;
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                                                                                                                                                                                                                                                                                                                                                . 280
                                                                                                                                                                                                                                                                                                                                                                              "Pol-2 CTL
                                                                                                                                                                                                                                                                                                                                    "Pol-1 CTL
                                                                                                                                                                                                                                                                                                                                                        "Nef-1
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7.9e-05;
                                                                                                                                                                                                                                                                                                                                  (AAB98917)
                                                                                                                                                                                                                                                                                                                                                        (AAB98916) "
                                                                                                                                                                                                                                                                                                                                                                               (AAB98915) '
                                                                                                                                                                                                                                                                                                                                                                                                     (AAB98914)"
                                                                                                                                                                                                                                                                                                                                                                                                                           (AAB98913)"
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RESULT 5
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Modified-site
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                                                                                             Claim
                                                                                                                             Inducing systemic immune response comprises mucosal administration lipid-tailed proteins or lipopeptide in absence of adjuvants.
                                                                                                                                                                                                            WPI; 2001-451597/48
                                                                                                                                                                                                                                                        Druilhe
                                                                                                                                                                                                                                                                                                       (INSP )
                                                                                                                                                                                                                                                                                                                                                                            09-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sublingual
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Lipid-tailed protein; mucosal membrane; immune system; lipoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                        08-DEC-2000; 2000WO-EP012794.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14-JUN-2001.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAB84738 standard;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           molecules, stimulating an HIV-specific CDB+ and CD4+ response. The methor permits the cessation of antiviral therapy on HIV-infected patients either without virus rebound, with a delayed rebound, or with decreased post-rebound set point, in addition to achieving immunological control of persistent infectious virus after discontinuation of antiviral therapy. The method is useful for people who have lost their CD4+ and/or CD8+ Total representation of the control of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            presented on major histocompatibility complex (MHC) class I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cell response;
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                                                                                        22; Page 26; 34pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GITERGREPVTPQVPLRPMTYK 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence of lipopeptide Nh2-K.
                                                                                                                                                                                                                                                      Gras-Masse
                                                                                                                                                                                                                                                                                                       PASTEUR.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cell response; intranasal immunisation
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The present sequence represents a lipid-tailed protein. is able to cross the mucosal membrane, and deliver an autimmune system. The lipoprotein is administered to a muco

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RESULT 6
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The invention relates to the generation of a lipopeptide comprising at least one auxiliary T epitope, at least one cytotoxic T lymphocyte (CTL) epitope and at least one lipid residue with (i) the epitopes and lipid portion and (ii) the epitopes, being separated independently by peptide spacers. These spacers comprise sequences of amino acids which carry an overall electrical charge in neutral media to ensure that the lipopeptide is hydrophilic. This peptide represents an example of them lipopeptide of the invention. It contains 2 lipid residues attached at the N-terminal end of the molecule and 2 epitopes separated by the spacer residues Serser and Ala-Ala. Peptides AAY53301-Y53549 represent peptide epitopes used in the generation of the lipopeptides. These are used in therapeutic or prophylactic compositions and vaccines to induce specific immune responses against human immunodeficiency, hepatitis B or papilloma viruses; p53 of melanoma or the malaria parasite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lipopeptide; epitope; cytotoxic T lymphocyte; CTL; lipid; spacer; electrical charge; hydrophilicity; vaccine; immune response; HIV; human immunodeficiency virus; hepatitis B virus; papilloma virus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          induce an immune response. The lipoprotein induces a B cell and/or a cell response. The lipoprotein is used to provide intranasal or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Synthetic.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New lipopeptide containing lipid regions and two epitopes, by peptide spacers that impart hydrophilicity, useful in v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 1999-583113/50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     07-APR-1998;
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Pred. No. 9.1e-06;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      vaccines
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tartar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              all separated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1,
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RESULT 7
AAP61515
ID AAP6
XX
RESULT 8
AAW89326
ID AAW8
XX
AC AAW8
XX
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Best Local S
Matches 17
                                                                                                                         Query Match
Best Local S
Matches 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                    A comparison of AAN60287 with the cDNA of the HTLV-III genome revealed one particular clone, designated p7.11 which contained a DNA sequence encoding this peptide (AAP60308) sequence. This approx. 2.2 kilobase covers the precursor gag region and encodes, 5′ to 3′, p-12, p-15, p-24 a second p-15 protein, and approx. 300 extra base pairs 3′ to the gag region (see AAN60288). (Updated on 27-AUG-2003 to correct OS field.)
                                                                                                                                                                                                                                                                                           Acquired immune deficiency syndrome polypeptide(s) - obtd. L
cloning etc. and used for diagnosis and in vaccines against
                                                                                                                                                                                                                                                                                                                          N-PSDB; AAN60288.
                                                                                                                                                                                                                                                                                                                                                       Capon DJ,
                                                                                                                                                                                                                                                                                                                                                                                                24-DEC-1984;
04-DEC-1985;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    09-JUL-1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EP187041-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HIV; LAV; AIDS; diagnosis; vaccine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence of E' protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27-AUG-2003
08-JUN-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAP61515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAP61515 standard; protein; 206 AA
                                                                                                                                                                                                                                                           Example; Fig 2; 125pp; English.
                                                                                                                                                                                                                                                                                  disease
                                                                                                                                                                                                                                                                                                                                    WPI; 1986-177602/28.
                                                                                                                                                                                                                                                                                                                                                                                                                                23-DEC-1985;
          AAW89326;
                                                                                                                                                                   Sequence 206 AA;
                               AAW89326
                                                                                                                                                                                                                                                                                                                                                                            (GETH ) GENENTECH INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             T-cell
                                                                                  64
                                                                                                      16
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17; Conserv
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                                                                                                                           16;
                                                                                                                                     Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QYIKANSKFIGITERGR
                                                                                              ERGREPVTPQVPLRPMTYK 34
                                standard;
                                                                                   EKVGFPVTPQVPLRPMTYK
                                                                                                                                                                                                                                                                                                                                                        Lasky LA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
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                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             lymphotropic virus 3B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (revised)
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                 85US-00805069.
                                                                                                                                                                                                                                                                                                                                                                                                            84US-00685272
                                                                                                                                                                                                                                                                                                                                                                                                                                85EP-00309454
                               protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     47.8%; Score 86;
100.0%; Pred. No.
tive 0; Mismatc
                                                                                                                                    47.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20
                                                                                                                           1;
                                                                                                                           Score 85; DB
Pred. No. 0.00
1; Mismatches
                                206
                                                                                   82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                         Db ;
0.00022;
2;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>ب</u>
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                                                                                                                                              Length 206;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                             Indels
                                                                                                                                                                                                                                                                                              by molecular
t virus
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                                                                                                                             Gaps
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RESULT 9
ABU63323
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Best Local S
Matches 16
24-DEC-1984;
04-DEC-1985;
08-MAY-1986;
02-AUG-1988;
                                                                                         US6534285-B1
                                                                                                                              Vaccine; R'; AIDS; AIDS-associated retrovirus; blood testing; retrovirus dissemination inhibition; blood product testing.
                                                                                                                                                                                                                                                                                                                                                                              The invention relates to an antigenic composition comprising an isolated primate lentivirus whose genome contains an engineered non-revertible null mutation in the nef gene, or an infectious DNA clone in a carrier. The antigenic composition is used in vaccines against infection by the lentivirus, e.g. AIDS. (Updated on 17-0CT-2003 to standardise OS field)
                                                 12-APR-2000;
                                                                       18-MAR-2003
                                                                                                             Human lymphotropic virus type III
                                                                                                                                                               Human lymphotrophic virus type III
                                                                                                                                                                                      24-SEP-2003
                                                                                                                                                                                                                            ABU63323 standard; protein; 206
                                                                                                                                                                                                                                                                                                                                                                Sequence 206
                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Fig 2A-R; 93pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12-JUL-1990;
09-JUL-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17-OCT-2003
01-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27-JAN-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Antigenic composition; primate; lentivirus; nef gene; vaccine; infection; AIDS; HIV-1; nef protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HIV-1 nef
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Lentivirus antigenic compositions - containing lentivirus with nef gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (HARD ) HARVARD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US5851813-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human immunodeficiency virus 1.
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                                                                                                                                                                                                                                                                                                                      Local Similarity
nes 16; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1999-080408/07.
DB; AAV81866.
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                                                                                                                                                                                                                                                                                64
                                                                                                                                                                                                                                                                               EKVGFPVTPQVPLRPMTYK
                                                                                                                                                                                                                                                                                                ERGREPVTPQVPLRPMTYK 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RC;
                                                                                                                                                                                                                                                                                                                        Conservative
                                                 2000US-00547692
                                                                                                                                                                                                                                                                                                                                                                AA:
                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (revised)
(first entry)
84US-00685272.
85US-00805069.
86US-00861016.
88US-00227568.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          90US-00551945
91US-00727494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94US-00188583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COLLEGE
                                                                                                                                                                                                                                                                                                                                47.2%;
                                                                                                                                                                                                                                                                                                                       1; Mismatches
                                                                                                                                                                                                                                                                                                                                Score 85;
Pred. No.
                                                                                                                                                                                                                                                                                82
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                                                                                                                                                                দ্
                                                                                                                                                               polypeptide
                                                                                                                                                                                                                                                                                                                                 0.00022;
                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                                                                                                                                                          2
                                                                                                                                                                                                                                                                                                                                       Length 206;
                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                   Gaps
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The invention relates to a composition which comprises a predetermined CC polypeptide sequence of an AIDS-associated retrovirus (AR), or its CC fragment, where AR or its fragment comprises at least one antigenic CC determinant that specifically binds to complementary antibody, and is CC essentially free of other naturally occurring AIDS-associated polypeptide CC infective. The composition is useful as diagnostic products and vaccines CC in the detection of and vaccination against viral aetiological agents of CC AIDS. The composition is also useful for inhibiting infection by AIDS-associated retrovirus and dissemination of retrovirus in infected CC individuals. The AR is useful in an assay system to identify compounds CC which inhibit AIDS-associated reverse transcriptase. The AR is also CC useful as diagnostic agents to detect AIDS in individuals donated blood cand blood products and as immunogens in the production of neutralising CC antibodies which confer resistance to infection by AIDS-associated CC the human lymphotrophic virus type III E' polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19-NOV-1992;
29-SEP-1993;
29-JUL-1994;
29-JUL-1998;
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                  Example 1; Fig 2; 49pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Composition useful as vaccine, has AIDS-associated retrovirus polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Berman PW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (GETH ) GENENTECH INC.
                                                                                                                                                                                                                                                                                                                                                                                                                 antigenic determinant that specifically binds to complementary dy, and is free of other AIDS-associated polypeptides.
206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Capon DJ,
ΑA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        92US-00979391.
93US-00129009.
94US-00282857.
98US-00124596.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lasky LA;
                                                                                                                                                                                                                                                                                                                                                                                  English.
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                S
                                Best Local Similarity
Matches 16; Conserv
                                                Query Match
 64
                 16
        ERGREPVTPQVPLRPMTYK 34
EKVGFPVTPQVPLRPMTYK 82
                                 Conservative
                                         47.2%;
84.2%;
                                <u>ب</u>
                                         Score 85;
Pred. No.
                                 Mismatches
                                         0
                                                DB
                            лв ;
J.00022;
2;
                                               Length 206;
                                Indels
                               0;
                               Gaps
                               <u>,</u>
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20-SEP-2001;
11-DEC-2001;
19-MAR-2002;
                                                                             WO2003025003-A2
                                                                                                Synthetic
                                                                                                        Human immunodeficiency virus
                                                                                                                          acquired
                                                                                                                                    Human
                                                                                                                                                  Plasmid p17/24opt/trNef1 insert protein sequence SEQ ID NO:55
                                                                                                                                                                       28-JUL-2003
                                                                                                                                                                                                        ABR44739 standard; protein; 505
                                          L8-SEP-2002;
                                                                                                                                  immunodeficiency virus; HIV-1;
                                                                                                                          immune
      2001WO-GB004207.
2001GB-00029604.
2002GB-00006462.
                                          2002WO-EP010592
                                                                                                                                                                       (first entry)
                                                                                                                       deficiency syndrome;
                                                                                                                        AIDS; HIV infection
                                                                                                                                  vaccine;
                                                                                                                               virucide; gene therapy;
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(GLAX ) GLAXO GROUP

GLT

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RESULT 11
ABR44747
ID ABR44747
ID ABR44
XX ABR44
XX ABR44
XX Plasm
XX Plasm
XX Human
XX Human
XX Human
XX WO200
XX WO200
XX IS-N
PN IS-S
PR 19-M
XX IS-S
PR 11-D
PR 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gag protein or its fragment containing a gag epitope, and a second HIV can tigen or its fragment encoding an epitope of the second HIV antigen, operably linked to a heterologous promoter. Also described: (1) a vector comprising the nucleotide sequence; (2) a pharmaceutical composition comprising the nucleotide sequence or the vector, and a pharmaceutical excipient, diluent, carrier or adjuvant; (3) an intradermal delivery device comprising the pharmaceutical composition; and (4) a process for the production of the nucleotide. HIV epitopes and antigens have virucide activity, and can be used in vaccines and gene therapy. The nucleotide sequence, vector or pharmaceutical compositions can be used in medicine, or for treating a patient suffering from or susceptible to a disease. The nucleotide sequence is also useful for manufacturing a medicament for the treatment of disease. The nucleic acid is particularly useful as DNA currents for treating e.g. acquired immune deficiency syndrome (AIDS) or CC HIV infections. The present sequence represents an HIV plasmid amino acid sequence, which is used in an example from the present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The
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                                    Beaton
                                                                                                                                                      20-SEP-2001; 2001WO-GB004207
11-DEC-2001; 2001GB-00029604
19-MAR-2002; 2002GB-00006462
                                                                                                                                                                                                                                                                                                                                     27-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                            WO2003025003-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human immunodeficiency virus 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         acquired
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plasmid p73i-GN2 insert protein sequence SEQ ID NO:71.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABR44747;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABR44747 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 505 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Example 3; Fig 4; 116pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     infections
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Beaton A,
                                                                                                                                                                                                                                                                       18-SEP-2002; 2002WO-EP010592
                                                                                               (GLAX ) GLAXO GROUP LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           present invention describes a nucleotide sequence encoding an HIV-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2003-363125/34.
)B; ACC69904.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      immunodeficiency virus; HIV-1; vaccine; virucide; gene therapy;
red immune deficiency syndrome; AIDS; HIV infection.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KARVLMVG---
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                                    Ertl PF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein;
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                                    Gough
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |||||||||||||
-FPVTPQVPLRPMTYK 381
                                       Ģ₩,
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lear A,
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                                       Tite
                                       JP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 505
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                                       Van
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ABR44751
ID ABR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 12
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Best Local S
Matches 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               comprising the nucleotide sequence; (2) a pharmaceutical composition comprising the nucleotide sequence or the vector, and a pharmaceutical excipient, diluent, carrier or adjuvant; (3) an intradermal delivery device comprising the pharmaceutical composition; and (4) a process for the production of the nucleotide. HIV epitopes and antigens have virucide activity, and can be used in vaccines and gene therapy. The nucleotide sequence, vector or pharmaceutical compositions can be used in medicine, or for treating a patient suffering from or susceptible to a disease. The nucleotide sequence is also useful for manufacturing a medicament for the treatment of disease. The nucleic acid is particularly useful as DNA vaccines for treating e.g. acquired immune deficiency syndrome (AIDS) or HIV infections. The present sequence represents an HIV plasmid amino acid sequence, which is used in an example from the present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The present invention describes a nucleotide sequence encoding an HIV-1 gag protein or its fragment containing a gag epitope, and a second HIV antigen or its fragment encoding an epitope of the second HIV antigen, operably linked to a heterologous promoter. Also described: (1) a vector
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New nucleotide sequences encoding an HIV-1 gag protein and a second HIV antigen, or their fragments, useful in medicine, particularly as vaccines for treating acquired immune deficiency syndrome (AIDS) or HIV
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                                           20-SEP-2001; 2001WO-GB004207.
11-DBC-2001; 2001GB-00029604.
19-MAR-2002; 2002GB-00006462.
                                                                                                                                                                                                                                  Misc-difference
                                                                                                                                                                                                                                                                                                                  Synthetic
                                                                                                                                                                                                                                                                                                                                                               acquired
                                                                                                                                                                                                                                                                                                                                                                 Human immunodeficiency virus; HIV-1; vaccine; virucide; gene therapy; acquired immune deficiency syndrome; AIDS; HIV infection.
                                                                                                                                                                                                                                                                                                                                                                                                                  Plasmid Trgn #6 insert protein sequence SEQ ID NO:80
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABR44751;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABR44751 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 505 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2003-363125/34.
                                                                                                               18-SEP-2002; 2002WO-EP010592
                                                                                                                                                  27-MAR-2003.
                                                                                                                                                                                                                                                                   Misc-difference
                                                                                                                                                                                                                                                                                                                                Human immunodeficiency virus
                                                                                                                                                                               WO2003025003-A2
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18; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                  231
                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                    /note= "encoded by AAG"
                                                                                                                                                                                                                                                   /note= "encoded by CCG"
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Pred. No. 0.00
1; Mismatches
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(GLAX ) GLAXO GROUP LTD

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RESULT 13
ABR44753
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cc gag protein or its fragment containing a gag epitope, and a second HIV cantigen or its fragment encoding an epitope of the second HIV antigen, coperably linked to a heterologous promoter. Also described: (1) a vector comprising the nucleotide sequence; (2) a pharmaceutical composition cc comprising the nucleotide sequence or the vector, and a pharmaceutical exception, diluent, carrier or adjuvant; (3) an intradermal delivery composition and the pharmaceutical composition; and (4) a process for cc the production of the nucleotide. HIV epitops and antigens have virucide activity, and can be used in vaccines and gene therapy. The nucleotide sequence, vector or pharmaceutical compositions can be used in medicine, cor for treating a patient suffering from or susceptible to a disease. The nucleotide sequence is also useful for manufacturing a medicament for the cucleotide sequence is also useful for manufacturing useful as DNA cc vaccines for treating e.g. acquired immune deficiency syndrome (AIDS) or HIV infections. The present sequence represents an HIV plasmid amino acid covered which is used in an example from the present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
           20-SEP-2001;
11-DEC-2001;
19-MAR-2002;
                                                                     18-SEP-2002;
                                                                                                       27-MAR-2003
                                                                                                                                    WO2003025003-A2
                                                                                                                                                                                 Misc-difference
                                                                                                                                                                                                               Misc-difference
                                                                                                                                                                                                                                                             Synthetic
                                                                                                                                                                                                                                                                       Human immunodeficiency virus
                                                                                                                                                                                                                                                                                                        acquired
                                                                                                                                                                                                                                                                                                                 Human immunodeficiency virus; HIV-1; vaccine; virucide; gene therapy;
                                                                                                                                                                                                                                                                                                                                                  Plasmid TngR(F1) protein sequence SEQ ID NO:84.
                                                                                                                                                                                                                                                                                                                                                                                     28-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                      ABR44753
                                                                                                                                                                                                                                                                                                                                                                                                                                               ABR44753 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1067 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New nucleotide sequences encoding an HIV-1 gag protein and a second HIV antigen, or their fragments, useful in medicine, particularly as vaccines for treating acquired immune deficiency syndrome (AIDS) or HIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Example 16; Fig 17; 116pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present invention describes a nucleotide sequence encoding an HIV-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               921
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KANSKFIGITERGRFPVTPQVPLRPMTYK 34
                                                                                                                                                                                                                                                                                                        immune deficiency syndrome; AIDS; HIV infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KARVLMVG-----FPVTPQVPLRPMTYK 943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
         2001WO-GB004207.
2001GB-00029604.
2002GB-00006462.
                                                                     2002WO-EP010592
                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                /note= "encoded by CCG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PF,
                                                                                                                                                              /note= "encoded by AAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein; 1067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   46.7%;
62.1%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 84; DB
Pred. No. 0.00
1; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1067;
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RESULT 14
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               comprising the nucleotide sequence; (2) a pharmaceutical composition comprising the nucleotide sequence or the vector, and a pharmaceutical excipient, diluent, carrier or adjuvant; (3) an intradermal delivery device comprising the pharmaceutical composition, and (4) a process for the production of the nucleotide. HIV epitopes and antigens have virucide activity, and can be used in vaccines and gene therapy. The nucleotide sequence, vector or pharmaceutical compositions can be used in medicine, or for treating a patient suffering from or susceptible to a disease. The nucleotide sequence is also useful for manufacturing a medicament for the treatment of disease. The nucleic acid is particularly useful as DNA vaccines for treating e.g. acquired immune deficiency syndrome (AIDS) or HIV infections. The present sequence represents an HIV plasmid amino acid sequence, which is used in an example from the present invention
                                                                                                                                                                                                                                                                                   Polyepitopic peptide; p53; cancer; human leukocyte antigen; HLA; immune response; cytolysis; cytotoxic T cell; CTL; cytokine secrinterleukin-2; IL-2; IL-4; gamma-interferon; p53-related cancer;
                                                                                                                                  07-OCT-1999;
                                                                                                                                                                                                                                   Human immunodeficiency virus
                                                                                                                                                                                                                                                                                                                                                       A polyepitopic fragment of HIV Nef, comprising residues
                                                                                                                                                                                                                                                                                                                                                                                           02-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAB31115 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1067 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present invention describes a nucleotide sequence encoding an HIV-1 gag protein or its fragment containing a gag epitope, and a second HIV antigen or its fragment encoding an epitope of the second HIV antigen, operably linked to a heterologous promoter. Also described: (1) a vector
                                                                                                  03-JUN-1999;
                                                                                                                                                                    08-DEC-2000
                                                                                                                                                                                                      FR2794368-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New nucleotide sequences encoding an HIV-1 gag protein and a second HIV antigen, or their fragments, useful in medicine, particularly as vaccines for treating acquired immune deficiency syndrome (AIDS) or HIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2003-363125/34.
N-PSDB; ACC69919.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                              BIOVECTOR THERAPEUTICS SA.
INSERM INST NAT SANTE & RECH MEDICALE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KANSKFIGITERGREPVTPQVPLRPMTYK 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                99FR-00007012
                                                                                                                                  99FR-00012512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    46.7%;
                                                                                                                                                                                                                                                                                   IL-4; gamma-interferon; p53-related cancer; NEF;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                               30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 84;
Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
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0.0019;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1067;
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                                                                                                                                                                                                                                                                                                                                                         68-97.
                                                                                                                                                                                                                                                                                                       secretion;
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Choppin J,

Bourgault VI,

Guillet JG,

Connan

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Ferries

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WPI;

2001-064173/08

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Best Local Similarity
Matches 15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present sequence represents a polyepitopic fragment of HIV Nef protein. The specification describes polyepitopic fragments of human p53, which is overexpressed in many types of cancers. The p53 polyepitopic fragments bind stably to human leukocyte antigen (HLA) type molecules. The p53 peptides induce a specific immune response. They induce cytolysis, by cytotoxic T cells (CTL), of cells that express the p53 peptides associated with appropriate HLA molecules and induce secretion of cytokines (particularly interleukin (IL)-2 and IL-4, and gamma-interferon) by these CTL. The p53 peptides, derivatives, nucleic acids encoding them and specific antibodies are used, in compositions or vaccines, to treat or prevent diseases p53-related cancers, particularly of breast, colon, lung or bladder
                                                                                                                                                                                                                                                                                                                                                                                                                                                 cytotoxic T cell; CTL; cytokine secretion; interleukin-2; IL-2; IL-4; gamma-interferon; HPV infection; cervical neoplasia; invasive cancer; vulvar intraepithelial neoplasia; Nef.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAB30938 standard; peptide; 30
The present sequence is derived from the Nef protein of Human immunodeficiency virus (HIV). The peptide is an polyepitopic fragment Nef. The specification describes polyepitopic fragments from the B6 a E7 proteins of human papilloma virus (HPV). The HPV peptides include
                                                                                                                  New polyepitopic fragments from human papilloma virus E6 and E7 useful for treatment or prevention of e.g. cervical neoplasia ar
                                                                                                                                                                     WPI; 2001-064175/08
                                                                                                                                                                                                       Choppin J,
                                                                                                                                                                                                                                                                                                                          07-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                           08-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                            Human immunodeficiency virus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Polyepitopic peptide; E6 protein; E7 protein; HPV; CD4 epitope; T helper cell; human leukocyte antigen; HLA; immune response; c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                02-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAB30938;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 30 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New polyepitopic fragments from the p53 protein, useful for treatment prevention of cancer, e.g. of breast or colon.
                                                                                    Disclosure;
                                                                                                                                                                                                                                                                                        03-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                             FR2794371-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Peptide comprising amino acids 68-97 of HIV Nef protein
                                                                                                                                                                                                                                                          (BIOV-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20
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                                                                                                                                                                                                                                     BIOVECTOR THERAPEUTICS SA.
INSERM INST NAT SANTE & RECH MEDICALE.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                  Page 6; 27pp; French
                                                                                                                                                                                                     Bourgault
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                          99FR-00007012.
                                                                                                                                                                                                                                                                                                                           99FR-00012511
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                                                                                                                                                                                                  . VI,
                                                                                                                                                                                                       Guillet JG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
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5.2e-05;
0;
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                                                                                                                                                                                                       Ferries
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                                                                                                                    37 proteins,
and cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cytolysis;
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: fragment of the E6 and include CD4

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epitopes recognised by T helper cells. They bind stably to human leukocyte antigen (HLA) type molecules. The HPV peptides induce a specific immune response, particularly cytolysis, caused by cytotoxic cells (CTL). They also induce secretion of cytokines (particularly interleukin-2 (IL-2) and IL-4, and gamma-interferon) by CTL. The HPV peptides, their derivatives, nucleic acids encoding them and specific antibodies are used, in compositions or vaccines, to treat or prevent diseases associated with HPV infection, e.g. cervical or vulvar intraepithelial neoplasia and invasive cancer of the cervix uteri. The antibodies are also useful for in vitro diagnosis of these diseases
Sequence 30 AA;
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밁 Ş 20 FPVTPQVPLRPMTYK 34  $\vdash$ FPVTPQVPLRPMTYK 15

Matches Query Match

Local Similarity les 15; Conserv

Conservative (

0,

46.1%;

Score 83; ; Pred. No. Mismatches

DB 4; Le

Length 30; Indels

0

Gaps

0;

Search completed: July 20, Job time: 51.7213 secs 2004, 06:30:29

Gaps

0;